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ABSTRACT

This report examines the quality of physician education in health care for women and efforts to promote equity in the status of women physicians. Part 1 identifies five general findings concerning health needs of women (e.g., women receive fragmented, uncoordinated care and there have been gender inequalities and biases in research), suggests components of a new paradigm in women's health, and identifies competencies needed by physicians in women's health. It notes demographic shifts that affect health services for women such as the increasing number of single parent families and increased diversity. Part 2 provides an overview of the status of women physicians in the training, academic, and practice environments. This section explores the impact of the increasing numbers of women in the medical profession, their practice characteristics, and the remaining barriers to career advancement for women physicians. It reports such findings as the increasing number of women in the profession and the continuing underrepresentation of women among leaders in medicine. It finds that gender bias remains the single greatest deterrent to women's achievements. Numerous recommendations concerning both physician education in women's health and the status of women physicians are offered. An appendix identifies key women's health issues throughout the life span. (Contains 138 references.) (CK)

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ED 396 623

Fifth Report: Women & Medicine

Physician Education in Women's Health

Women in the Physician Workforce

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COUNCIL ON GRADUATE MEDICAL EDUCATION

Fifth Report: Women & Medicine

- *Physician Education in Women's Health*
- *Women in the Physician Workforce*

July 1995

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
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Editorial assistance was provided by Rebecca D. Rinehart.

Errata

Council on Graduate Medical Education

Fifth Report: Women and Medicine

Page 14 — In the third paragraph, the second sentence, which is applicable to Figure 10, should read as follows: "In this study of women residing in New Jersey in whom breast cancer was diagnosed during 1985-1987, women who were uninsured or covered by Medicaid had more advanced disease at the time of diagnosis and worse survival rates with cancer in local and regional stages than women who were privately insured (Fig. 10)(33)."

Page 15 — In Figure 10, the key describing the lowest curve should read "Covered by Medicaid" not "Covered by Medicare."

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Preface

The purpose of the Council on Graduate Medical Education's (COGME) Fifth Report, "Women and Medicine: Physician Education in Women's Health and Women in the Physician Workforce," is to improve the quality of health care for women and to encourage efforts to promote equity in the status of women physicians. The two subjects have been developed in tandem because they are so inextricably linked and have a profound effect on women as both providers and recipients of health care. Attention to women's interaction in all aspects of medicine can enhance the role of women in the delivery of health care and promote women's health in general.

The increasing numbers of women physicians and their influence as agents of change is evident throughout medical education, research, and practice. Women are also assuming new roles, and acquiring different health care concerns, in response to changes in demographics, socioeconomic factors, and medical knowledge. Because of these emerging issues, this report has been devoted to health care as it relates to women. This approach is not intended to downplay equally serious aspects of the health care needs of other populations, including children and men. Rather, it is intended to focus on benefits that will accrue to both female and male patients, as well as to all physicians, from frank attempts to meet the challenges presented by issues of gender in the health care system.

Issues in the Fifth Report were developed in part through discussions with an Advisory Group of representatives from the medical and academic communities. The report summarizes the information from which the Council drew its findings and developed its recommendations. The report is divided into two sections: Part I, Physician Education in Women's Health, and Part II, Women in the Physician Workforce.

The goal of Part I is to increase physicians' understanding of the unique aspects of women's health in order to improve health care delivery. Within this context, physician training is examined, qualifications are suggested, and needed changes in medical education and research identified. Most importantly, since change begins with a vision, a new paradigm in women's health is presented. It is based on broad principles recognizing the gender-sensitive biological mechanisms and psychosocial factors that influence health and disease characteristics and patterns. To help realize this vision, curricular changes and the development of academic and clinical programs in women's health are outlined along with suggested actions by academic medical institutions, professional organizations, and government agencies.

Part II provides an overview of the status of women physicians in the training, academic, and practice environments. By the year 2010, it is projected that 30% of all practicing physicians will be women—a 19% increase over current levels. Today, in several of the nation's leading medical schools the majority of beginning students are women. These figures indicate a rather recent rapid transformation of a profession traditionally dominated by men. The impact of the increasing numbers of women, their practice characteristics, as well as the remaining barriers to career advancement for women physicians are explored. Finally, suggestions for change to enable women to achieve their full potential within the physician workforce are presented.

The Council views the topics of women in medicine and the training of physicians to care for women as an important part of its workplan. Considerations of women in the physician workforce are directly related to the Council's charge to review the supply and distribution of physicians in light of health care needs. The health care, social science, and educational fields are becoming more attuned to the barriers to and the impact of increasing numbers of female physicians and their important roles in medical education and health delivery. The public and policymakers are increasingly interested in understanding the unique health and health care needs of women and how physicians can be better educated to care for women. In its role of advising the Department of Health and Human Services Secretary and Congress on medical education and graduate medical education, COGME believes the areas covered in this report may serve as important barometers of the system's responsiveness to societal needs.

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Introduction

The Council on Graduate Medical Education (COGME) serves in an advisory capacity, providing an ongoing assessment of physician workforce trends and recommending appropriate Federal and private sector efforts to address identified needs. Title VII of the Public Health Service Act in Section 799(h), as amended by Public Law 99-272, requires that COGME report to the Department of Health and Human Services Secretary and Congress on a broad range of topics:

1. The supply and distribution of physicians in the United States;

2. Current and future shortages or excesses of physicians in medical and surgical specialties and subspecialties;

3. Issues relating to international medical school graduates;

4. Appropriate Federal policies with respect to the aforementioned matters, including policies concerning changes in the financing of undergraduate and graduate medical education programs and changes in the types of medical education and graduate medical education programs;

5. Appropriate efforts to be carried out by hospitals, schools of medicine, schools of osteopathy, and accrediting bodies with respect to the aforementioned matters, including efforts for changes in undergraduate and graduate medical education programs;

6. Deficiencies and needs for improvements in existing databases concerning the supply and distribution of, and postgraduate training programs for, physicians in the United States and steps that should be taken to eliminate those deficiencies. The Council is to encourage entities providing graduate medical education to conduct activities to achieve voluntarily the recommendations of this Council under item 5.

The Third Report of the COGME, "Improving Access to Health Care Through Physician Workforce Reform," released in October 1993, identified strategies to improve access to health care through physician workforce reform. In its Third Report, COGME concluded that physician oversupply and overspecialization, shortages of minority and generalist physicians, and poor geographic distribution would hinder efforts to expand coverage and control costs. In its Fourth Report, "Recommendations to Improve Access to Health Care Through Physician Workforce Reform," released in January 1994, COGME recommended specific legislation to accomplish the objectives identified in the Third Report. In its discussions about physician supply and specialty distribution, the Council recognized that population subsets, including women, have important and specific health care needs.

In February 1993, the Council heard from a panel of experts on issues pertaining to women's health and the status of women physicians. In their remarks, Drs. Vivian Pinn, Director of the National Institutes of Health—Office of Research on Women's Health; Lillian Gonzalez-Pardo, former president of the American Medical Women's Association; and Agnes H. Donahue, former Director of the Public Health Service Office on Women's Health, reinforced the Council's idea of pursuing these two complementary topics in one report.

The Council organized an advisory group to explore many of the issues raised in the panel presentations. The Advisory Group was composed of generalist and specialist physicians and educators as well as representatives from selected medical organizations and educational groups. Although it was not possible to include all of the many interested parties in the Advisory Group, the review process was designed to ensure full-scale representation. The Council circulated a draft of the report to national and specialty organizations for review and public comment in December 1994. This review elicited extensive responses, all of which were considered and many of which were incorporated in the final version of the Fifth Report that was approved by the Council in January 1995.

Following is a summary of the findings of Part I, "Physician Education in Women's Health":

- Women have important health needs throughout their life spans. In addition to conditions specific to women, a number of chronic conditions are more prevalent in women. Physicians should have a broad understanding of, competency in, and ongoing education about such conditions, and gender issues should be incorporated and evaluated at all academic levels.

- Women will be affected by demographic shifts in the United States in relation to aging, an increase in racial and ethnic minorities, social trends resulting in more working and single-parent women, and lack of health insurance and access to routine and preventive care. Physician education and training should take these changes into consideration.

- Women have difficulty receiving comprehensive and coordinated care as a result of deficiencies in physician training and fragmented care. Women should be full participants in changes in health care at the national and the community levels. Physicians acting as primary care providers should have a broad understanding of issues relating to women's health.

- Medical education at all levels should adopt an interdisciplinary approach to care that relates to the biological, social, and psychological needs of women. Traditional approaches to medical education should be supplemented by programs and fellowships in women's health that integrate relevant issues from all specialties.

- Women are underrepresented in research, resulting in a lack of knowledge of how disease processes differ in men and women. Current and expanded efforts to promote research in women's health should be supported.

Following is a summary of the findings of Part II, "Women in the Physician Workforce":

- The current increase in the number of women entering the medical profession will have an ongoing and expanding impact on medical education, research, and practice. To ensure that women are well represented at all levels, medical schools and academic health centers should encourage interest in medical careers through outreach programs.

- Women physicians are underrepresented in higher academic and leadership positions as well as in research. Salaries should be analyzed at specific intervals based on gender to ensure that female physicians receive the same compensation as male physicians for the same work. Leadership development and training for women should be encouraged, and males in leadership positions should serve as mentors to women. The participation of women in basic and clinical medical research should be supported.

- Women tend to cluster in primary care disciplines. Workforce policies aimed at decreasing the number of residency positions and increasing the number of positions in primary care should not result in limiting subspecialty opportunities open to women.

- The increase in the proportion of women physicians will have a minimal impact on physician supply and workforce projections. The gender ratio in the physician workforce should continue to be monitored, and policies should be developed to promote women's access to the medical profession.

- Gender bias is a deterrent to women achieving their full potential in the medical profession and is a barrier throughout women's professional lives. Alternatives should be available to allow time for childbearing and childrearing without penalty, and education and work schedules should be flexible to allow time for personal and family responsibilities. Educational programs should have potent mechanisms for eliminating bias and sexual harassment.

COGME recognizes that multiple populations, including women, have unique health care needs. Future reports of the Council will consider the physician supply needs of other subsets, specifically the access problems of urban and rural underserved populations, and underrepresentation of minorities in the physician workforce. Other reports to be released in 1995 deal with COGME's physician workforce funding recommendations, and the impact of managed care on physician workforce and medical education.

Part I – Physician Education in Women's Health

The current interest in women's health has its basis in the women's health movement of the 1960s. This grass-roots movement was fueled by the feminist movement and reflected women's discontent with the lack of accessible information regarding their health and the prevailing paternalistic attitude of medicine. The most prominent product of this movement was the book *Our Bodies, Ourselves* by the Boston Women's Health Collaborative (1). The goal of this book was to improve the health of women by teaching them how their bodies worked and how they could become active participants in their health care. Over the past three decades, it has served as a guide for women interested in understanding their basic health needs.

Political forces behind the current women's health movement differ markedly from those of the 1960s. In 1983, the Assistant Secretary for Health commissioned the U.S. Public Health Service to form a task force to assess the status of women's health in the United States and to identify the most important factors that influence health and disease. The task force's recommendations, published in 1985, presented a blueprint for change in the approach to women's health (2). The task force broadly defined women's health issues as "diseases or conditions that are unique to or more prevalent or serious in women, have distinct causes or manifest themselves differently in women, or have different outcomes or interventions." It recognized the effect of social and demographic changes on women's health status and stressed the importance of preventive health services for women. Furthermore, the report identified potential biases in research and clinical practice that result in inadequate care for women.

In response to this report, the General Accounting Office examined expenditures by the National Institutes of Health (NIH) in 1987 to determine how research funds were allocated according to gender. The study found that 13.5% of the NIH budget supported research on women's health issues. About 80% of all NIH research funds were expended either for studies of diseases that affect both men and women or for fundamental research that has significance for diseases of all segments of the population (3). Further review, however, showed that women were not adequately represented in many of the research studies affecting both genders.

These findings brought an outcry from the Congressional Caucus for Women's Issues. In response, NIH established the Office of Research on Women's Health (ORWH) in 1990. This freestanding office, located within the Office of the Director of NIH, has a threefold mandate: 1) to enhance research in women's health and to ensure that women's health issues are addressed adequately in research conducted by NIH; 2) to ensure that women are appropriately represented in all studies supported by NIH; and 3) to increase the number of women in biomedical careers (4). Coincident with the establishment of the ORWH, Dr. Bernadine Healy was appointed the first woman director of NIH. Her commitment to women's health issues helped establish the strong scientific framework necessary to advance a women's health agenda.

Recently, public and professional attention has focused on whether physicians are being adequately trained to care for the health needs of women. Within the medical profession, some women's health advocates have called for a separate women's health specialty. In 1993, Congress requested that the Department of Health and Human Services examine the content of undergraduate medical education devoted to women's health (5, 6). This legislation authorizes the Health and Human Services Secretary to survey medical school curricula to determine how women's health issues are incorporated and, if inadequate, to make recommendations for change.

These developments reflect a call for change in the education of physicians who care for women. Medical educators, researchers, and practitioners are being challenged to reexamine curricula, research agendas, and competencies with regard to the health of women. The call for change has been prompted by the perception that the health care needs of women are not being met by the current health care delivery and medical education systems. The issues extend beyond the current national debate over the restructuring and refinancing of health care. They concern basic institutional precepts that have guided the conduct of medical research, education, and practice, as well as societal biases that have influenced the health of women and other populations in society today.

Through studies, recommendations, and conclusions, medical research provides the biopsychosocial framework for health care. Yet for years, knowledge about illness and diseases as well as aspects of treat-

ment, including pharmacology, was derived from studies of men and applied to women with the supposition that there are no significant differences in women's reactions to such applications. In recent years, increased attention to these issues through grass-roots efforts and news media coverage has supported studying the determinants of health in women. From resulting new knowledge, approaches may be designed to improve the status of women's health.

Many have called for a broadening of the knowledge base and training of health professionals to better prepare them to be responsive to women's health concerns. This broadening entails an appreciation of the basic biological differences between the genders as well as the demographic, psychosocial, economic, and environmental factors that affect women's health. Educational and clinical initiatives are needed to increase the understanding of similarities as well as differences and unique qualities of women's health with the goal of improving health care.

The area of women's health traditionally has focused on reproductive issues in adolescent girls and adult women. As such, the reference for women's health care has been confined primarily to the disciplines pertaining to childbearing. This limited perspective does not take into account the broad spectrum of women's health concerns or the relative differences between men and women in terms of health behaviors, morbidity, disability, and mortality. This more limited perspective also may not recognize the demographic, social, cultural, or political influences on women's health or their approach to health care.

This report is directed to the health of women. Gender-specific health concerns arise during childhood and have a long-term impact; although these early issues are important, they are not included in this report. Actually, the health of women can be perceived as a continuum that extends throughout life. Biological differences between males and females become established in the embryonic period and are among the factors that affect subsequent physical, cognitive, and social development. From a societal perspective, the health of women to a great extent affects the health and well-being of their children. During the preconceptional and prenatal periods, the health of the mother can have a direct effect on her unborn baby. Undetected or untreated medical conditions can increase morbidity and mortality in both the mother and the baby. The intergenerational implications of women's health are illustrated dramatically by the tragic effects of the maternal use of harmful substances such as thalidomide and diethylstilbestrol. Emphasis on routine and preventive care can address psychosocial aspects of women's health and provide opportunities for counseling, health maintenance, and early intervention. The following findings and information identify special health needs of women and factors that may influence their future health.

Findings of the Council on Graduate Medical Education

Finding 1: Women have important health needs throughout their life spans.

- **Mortality rates alone do not provide a complete picture of women's health status. There are distinct gender differences in health status between men and women as reflected in data on morbidity as well as mortality.**
- **Although women live longer than men, overall health status is worse for women than for men in terms of disability, morbidity, and chronic illness.**
- **From the perceptions and manifestations of illness to causes of death, women move through cycles of health and illness differently than do men. Their unique health needs should be addressed accordingly.**

Mortality in Women

Leading causes of death for women follow different patterns and trends when compared with those of men (7). Mortality statistics are based on information from all death certificates filed in the 50 states and the District of Columbia. To place mortality rates for women in perspective, the male-to-female ratios for the 15 leading causes of death in the United States are shown in Table 1 (8). Age-adjusted death rates are higher for men for each of the 15 leading causes of death and are approximately 70% higher for men for all causes of death combined. The leading causes of death in women of all ages and races are shown in Table 2 (8).

Heart Disease

Despite a dramatic decline in mortality rates for heart disease in both sexes over the past two decades, heart disease remains the leading cause of death for women and accounts for one-third of all deaths in women. Heart disease occurs about 10 years later in women than in men. This delayed onset is thought to be related primarily to the protective effect of estrogen in premenopausal women, which accounts for the fact that 90% of deaths from heart disease in women occur after the menopause. There are significant racial and ethnic differences in mortality rates among women. Up to age 75 years, African-American women are more

Table 1. Ratio of Age-Adjusted Death Rates for the Leading Causes of Death: United States,1991*

Rank Order	*Causes of Death*	*Ratio of Male to Female*
...	All causes	1.73
1	Diseases of the heart	1.89
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissue	1.47
3	Cerebrovascular diseases	1.19
4	Chronic obstructive pulmonary diseases and allied conditions	1.74
5	Accidents and adverse effects	2.63
	Motor vehicle accidents	2.39
	All other accidents and adverse effects	2.94
6	Pneumonia and influenza	1.65
7	Diabetes mellitus	1.14
8	Suicide	4.37
9	Human immunodeficiency virus infection	7.44
10	Homicide and legal intervention¡	3.84
11	Chronic liver disease and cirrhosis	2.25
12	Nephritis, nephrotic syndrome, and nephrosis	1.54
13	Septicemia	1.31
14	Atherosclerosis	1.36
15	Certain conditions originating in the perinatal period	1.27

*Age-adjusted rates per 100,000 U.S. standard million population.

Source: National Center for Health Statistics. Final Mortality Statistics, 1991. Monthly Vital Statistics Report, vol. 42, no. 2, suppl. Public Health Service, August 1993.

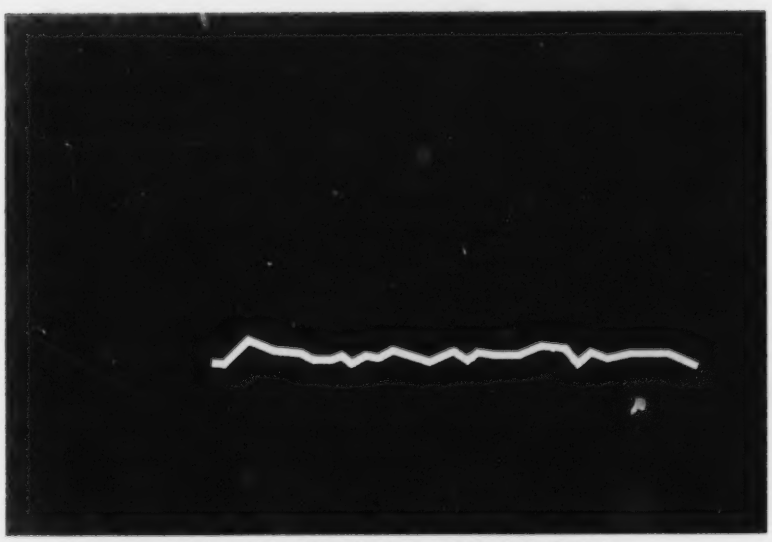
Table 2. Age-adjusted Death Rates for Leading Causes of Death: U.S. Females, 1991

Causes of Death	*Rate (per 100,000 population)*	*Total Deaths (%)*
All causes	386.5	100.0
Cardiovascular disease	138.5	35.8
Malignant neoplasms	112.6	29.1
Lung	26.5	6.9
Breast	22.7	5.9
Colorectal	13.2	3.4
Cerebrovascular disease	24.7	6.4
Unintentional injuries	17.2	4.5
Chronic lung disease	15.5	4.0
Diabetes	11.1	2.9
Pneumonia/influenza	10.6	2.7
Suicide/homicide	8.8	2.3

Source: National Center for Health Statistics. Final Mortality Statistics, 1991. Monthly Statistics Report, vol. 42, no. 2, suppl. Public Health Service, August 1993.

likely to die frrom heart disease than are Caucasian women; thereafter, death rates are higher in Caucasian women. In contrast, Hispanic and Native American women have significantly lower rates of death from heart disease. Evidence suggests that heart disease, once it develops, is more serious in women than in men, resulting in lower survival rates following acute myocardial infarction. In addition to biological factors, the poorer survival of women may be related to the older age and increased prevalence of other conditions in women at the time of diagnosis. Compared with men, women are less often referred for diagnostic cardiac catheterization, and they are treated with angioplasty and bypass surgery later in the course of disease. Consequently, women who undergo these procedures experience a higher rate of complications and death (9).

Source: Marshall E. Search for a killer: Focus shifts from fat to hormones. Science 1993; 259:618-621.



Source: Marshall E. Search for a killer: Focus shifts from fat to hormones. Science 1993; 259:618-621.

Cancer

Cancer is the second leading cause of death in women and is the most common cause of premature death or loss of years of productive life. The mortality rate in women for all cancers combined has changed little during the second half of this century. Major advances in the fight against cervical and uterine cancers have been offset by an increase in mortality rates in women for lung and breast cancer. Although breast cancer remains the most common cancer diagnosed in women, lung cancer is now the leading cause of cancer death (Fig. 1). Most of these lung cancer deaths can be attributed to cigarette smoking. While the death rate from lung cancer in men has remained fairly stable as the result of a decrease in cigarette use by males, death rates for women have increased dramatically and are expected to continue to rise into the next century.

Breast cancer is the second leading cause of cancer deaths in women. Although there has been a sharp increase in the incidence of breast cancer over the past decade, mortality rates have remained relatively stable (Fig. 2). This disparity is thought to be partly the result of the widespread use of screening mammography and the detection of earlier stage cancers that have a more favorable prognosis. There are significant age and racial differences in breast cancer mortality rates. Declining mortality rates in younger women have been offset by an increase in older women. Although breast cancer incidence rates are 20% lower in African-American women than in Caucasian women, mortality rates are 15% higher in African-American women. Reasons for racial differences in breast cancer incidence and mortality have not been delineated but may be related to socioeconomic and biological factors as well as certain health behaviors, such as participation in screening mammography and access to regular care. Although it has been shown that breast cancer screening with mammography and clinical breast examination decreases mortality from breast cancer in women over age 50 by approximately 30%, fewer than 50% of American women in that age group undergo regular screening. This figure is considerably lower in poor, minority, and elderly women.

Cancer of the colon and rectum is the third leading cause of cancer deaths in women. Although there are no significant gender differences in the incidence of and mortality rates for this disease, colorectal cancer accounts for 12% of all cancer-related deaths in women and is a significant cause of morbidity.

Stroke

Although stroke-related deaths have declined by almost 60% in the United States over the past 25 years, deaths from stroke still account for 6.4% of all deaths in women and rank third as a cause of mortality.

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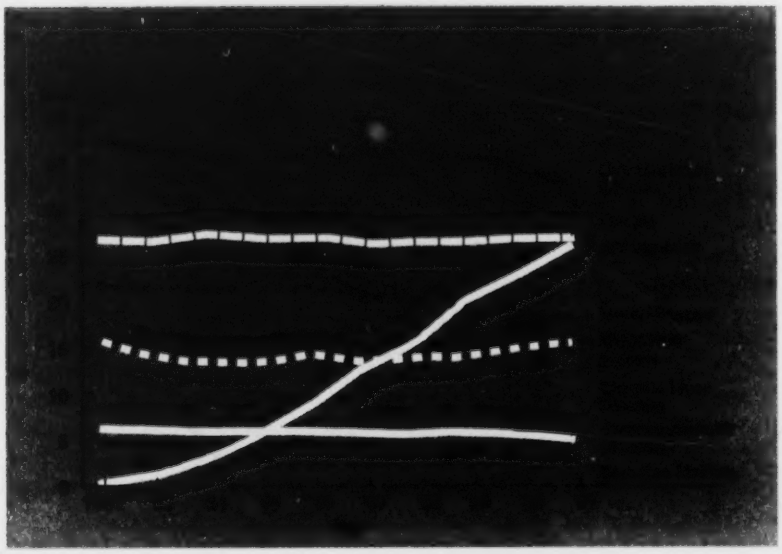

* Per 100,000 population

[2] National vital statistics based on underlying cause of death, using final data for 1982-91 and provisional data for 1992 and 1993. Data for liver disease in 1992-93 were unavailable.

Source: National Center for Health Statistics, CDC

There are striking racial differences in stroke mortality; death rates in African-American women are almost twice those for Caucasian women. Most of the stroke deaths in women are caused by thromboembolic disease and occur in older women. However, subarachnoid hemorrhage, the least common form of stroke, is more common in women than in men and contributes to stroke mortality, particularly in younger women.

Chronic Lung Disease

Deaths from chronic pulmonary diseases have increased steadily for both women and men during the past 25 years; however, the increase has been greater in women than in men. Because this increase has been linked to cigarette smoking, the increase in deaths is expected to continue into the next century. Death rates from pneumonia and influenza closely parallel those of pulmonary-related deaths and vary over time based on the epidemiology of these acute illnesses.

Injuries and Violence

Fatal injury from unintentional acute trauma is the fourth leading cause of death in women. Included in this category are deaths caused by motor vehicle accidents, drowning, poisoning, fires, and falls.

Mortality rates for homicide and suicide are ranked separately from rates for unintentional deaths. Death rates due to these intentional injuries are rising rapidly in both men and women and disproportionately affect younger, minority populations.

Between 2 to 4 million women are physically battered each year by partners (10). Domestic violence is associated with homicide, suicide attempts, substance abuse, and mental illness among women.

Diabetes Mellitus

Diabetes mellitus has consistently ranked as a leading cause of death in women. Moreover, the reported death rate from diabetes mellitus most likely underestimates the impact of this disease on mortality because of its strong association with other life-threatening medical conditions, such as cardiovascular disease, stroke, and kidney failure. It is estimated that diabetes mellitus affects one in seven women over age 45 years in general; however, prevalence rates are even higher in African-American, Hispanic, and Native American women. Diabetes mellitus is also a significant cause of morbidity; in women of childbearing age it has important adverse effects on pregnancy outcome, resulting in an increased risk of perinatal mortality as well as congenital malformations.

Human Immunodeficiency Virus Infection

Although human immunodeficiency virus (HIV) infection is not one of the 10 leading causes of death, it is responsible for the largest increase in death rates in men and women ages 25–44 (Fig. 3) (11). In African-American women, the death rate for HIV infection is 10 times that of Caucasian women, and the death rate is disproportionately high in younger women. As a result, HIV infection ranks fifth among causes of death in African-American women ages 15–24 years and third in those ages 25–44 years. In Caucasian women in these age groups, the corresponding rank orders of HIV-related mortality rates are ninth and sixth, respectively (8).

Morbidity in Women

Mortality rates alone do not provide a complete picture of women's health status. Although women live longer than men, women experience more acute and chronic conditions and account for a higher percentage of office visits to physicians throughout most of their lifetime.

Self-Reported Conditions

The following information on acute and chronic conditions, disabilities, and health perceptions in women is based on current estimates from the National Health Interview Survey (NHIS), an ongoing nationwide survey in which data are collected about certain health topics through household interviews (12). According to the responses, more women than men report symptoms or seek care for acute medical conditions, such as respiratory and digestive disorders, and women are more disabled by these illnesses as measured by the number of days of restricted activity or hospitalization or days lost from work (Table 3). In addition, certain

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Table 3. Age-Adjusted Selected Indicators of Health Status and Medical Care Utilization, 1991.

Indicator	*Female*	*Male*	*Female-to-Male*
Physician contacts (per person)	6.6	4.9	1.3
Acute conditions (per 100 persons)	204.7	178.1	1.2
Restricted activity days (per person)	8.2	6.4	1.3
Days lost from work (per person ≥ 18 years)	3.7	2.8	1.3
Hospitalization (excluding deliveries)	5.4%	4.8%	1.1
Excellent health (self-report)	35.8%	41.4%	0.9

Source: National Center for Health Statistics. Vital and Health Statistics. Current Estimates from the National Health Interview Survey, 1991.

Table 4. Office Visits by Principal Reasons for Visit Most Frequently Mentioned by Patients: United States, 1991

		Distribution of Visits %		
Reason for Visit	*Number of visits (in1000s)*	*All Visits*	*Female*	*Male*
All visits	669,689	100.0	100.0	100.0
General exam	29,720	4.4	4.8	3.9
Cough	24,263	3.6	3.6	3.7
Routine prenatal exam	19,675	2.9	4.9	--
Throat symptoms	17,882	2.7	2.7	2.6
Postoperative visit	16,308	2.4	2.3	2.7
Earache or ear infection	13,404	2.0	1.9	2.1
Well-baby exam	13,276	2.0	1.7	2.4
Back symptoms	12,977	1.9	1.9	2.0
Skin rash	12,119	1.8	1.7	2.0
Stomach pain, cramps, and spasms	11,106	1.7	1.8	1.4
Fever	10,318	1.5	1.5	2.1
Headache, pain in head	10,128	1.5	1.2	1.5
Vision dysfunction	10,011	1.5	1.5	1.5
Knee symptoms	9,522	1.4	1.2	1.7
Nasal congestion	8,444	1.3	1.1	1.5
Blood pressure test	7,645	1.1	1.2	1.1
Head cold, upper respiratory infection	7,516	1.1	1.1	1.2
Neck symptoms	7,193	1.1	1.0	1.1
Depression	7,060	1.1	1.2	0.9
Low back symptoms	7,051	1.1	0.8	1.4
All other reasons	413,971	61.8	60.9	63.2

Source: Schappert SM. National Ambulatory Medical Care Survey: 1991 Summary. National Center for Health Statistics 1993;230:1-9.

chronic conditions that cause significant disability such as arthritis, thyroid disease, migraine headache, genitourinary tract disorders, gastritis, colitis, and chronic constipation occur more frequently in women. Data from other sources show that affective disorders, especially depression and anxiety disorders, are more prevalent in women (13, 14, 15).

In addition, women's perceptions of their health status are lower than men's. According to estimates from the NHIS, only 36% of women describe their health as excellent, compared with 41% of men. This disparity in well-being is greatest in the age group 18–44 years, the period that defines women's reproductive years.

Reasons for Office Visits

Additional information about the common conditions that affect women's health is provided by the National Ambulatory Medical Care Survey (NAMCS), a population-based survey of visits to office-based physicians (16). In 1991, 60% of all office visits were made by women, and women accounted for a higher proportion of visits in all age categories except those under age 15 years. As part of the survey, physicians are asked to record the patient's chief complaints, symptoms, or other reasons for the visit. The most frequently mentioned principal reasons for visits for women and men, representing close to 40% of all visits, are shown in Table 4. A general medical examination was the most common nonobstetric reason for visits by women, followed by cough and other upper respiratory and ear symptoms. Complaints such as skin rash, stomach pain, headache, and musculoskeletal symptoms and reasons such as a well-baby examination and blood pressure testing accounted for the remaining frequent visits.

Principal Outpatient Diagnoses

Physicians in the NAMCS also record the principal diagnoses associated with each patient visit (Table 5). Overall, the diagnoses for women correlated with

Table 5. Office Visits by Principal Diagnoses Most Frequently Rendered by Physicians: United States, 1991

		Distribution of Visits		
Principal Diagnosis	*Number of visits (in 1000s)*	*All Visits*	*Female*	*Male*
All visits	669,689	100.0	100.0	100.0
Essential hypertension	23,188	3.5	3.6	3.3
Normal pregnancy	20,657	3.1	5.2	--
General medical exam	8,321	2.7	2.6	3.0
Health supervision of infant or child	17,271	2.6	2.1	3.3
Acute upper respiratory infections of multiple or unspecified sites	16,928	2.5	2.4	2.7
Suppurative and unspecified otitis media	16,185	2.4	2.1	3.0
Diabetes mellitus	12,793	1.9	1.8	2.0
Chronic sinusitis	11,570	1.7	1.8	1.7
Glaucoma	11,043	1.6	1.7	1.6
Acute pharyngitis	11,015	1.6	1.5	1.9
Bronchitis, not specified as acute or chronic	9,757	1.5	1.6	1.2
Diseases of sebaceous glands	9,464	1.4	1.5	1.4
Allergic rhinitis	9,405	1.4	1.4	1.4
Asthma	8,804	1.3	1.2	1.5
Cataract	7,540	1.1	1.1	1.1
Contact dermatitis and other eczema	7,048	1.1	1.0	1.1
Sprains and strains of other and unspecified parts of back	6,381	1.0	1.3	0.5
Special investigations and examinations	6,318	0.9	1.3	0.5
Neurotic disorders	6,220	0.9	1.0	0.8
General symptoms	6,101	0.9	0.9	1.0
All other diagnoses	433,680	64.8	63.3	66.4

Source: Schappert SM. National Ambulatory Medical Care Survey: 1991 Summary. National Center for Health Statistics 1993;230:1-9.

their reported reasons for visits. Essential hypertension was the most common illness-related diagnosis in women, followed by respiratory, ear, nose, and throat infections. Diabetes mellitus, glaucoma, acne, asthma, dermatitis, back strain and axiety were among the acute and chronic conditions commonly diagnosed.

A Life-Span Approach to Women's Health Issues

The information presented in the preceding sections provides a series of snapshots of selected measures of women's health viewed from several different perspectives. Many of the important health issues in women have their onset or greatest impact at certain ages, however, and are intricately linked with women's psychosocial and sexual development. For a more integrated understanding of women's health, it is helpful to consider the important health issues in women at different stages in their life spans, which are detailed in the Appendix and outlined here.

Birth to Adolescence

Key health issues affecting girls from birth through adolescence include the following:

- Developmental issues: Physical, sexual, and psychosocial
- Injuries
- Suicide
- Chronic disease or disability
- Sexual abuse

Ages 15–44 Years

Key health issues affecting women ages 15–44 years include the following:

- Breast and reproductive tract cancers
- HIV infection
- Risk-taking and health behaviors
- Substance abuse
- Eating disorders
- Reproductive health
- Autoimmune disorders
- Mental disorders
- Injuries
- Interpersonal violence

Ages 45–64 Years

Key health issues affecting women ages 45–64 years include the following:

- Chronic disorders
- Menopause
- Life cycle transitions
- Cancer

Ages 65 Years and Older

Key health issues affecting women ages 65 years and older include the following:

- Chronic and degenerative conditions
- Social isolation

Health Needs in Special Populations

The issues involved in women's health vary according to the special needs of the populations of women involved. Following are examples of issues that can be considered special needs. These examples should be considered representative, not encompassing.

Homeless Women

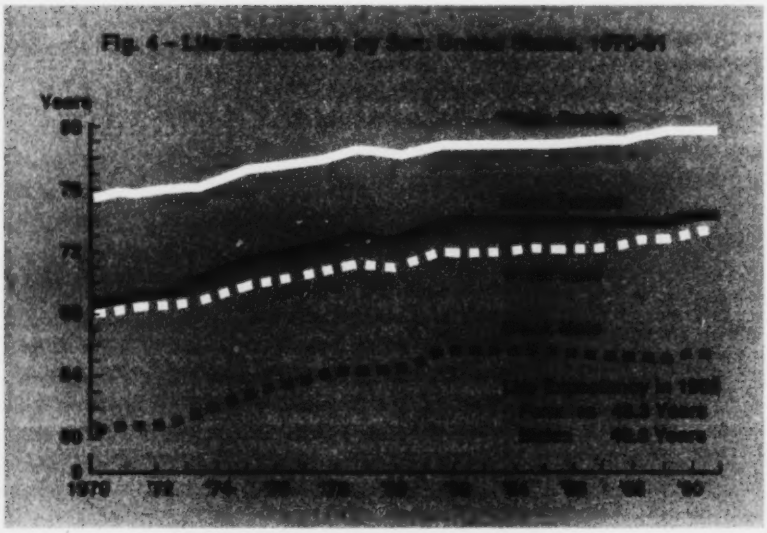
Over the past decade, an increasing number of women have joined the ranks of the homeless. They live on the streets and in shelter systems•many have young or school-aged children. Evictions, domestic violence, loss of income, and substance abuse may contribute to homelessness. Homeless women experience a range of medical and health problems and are at risk for acute illnesses, unintended pregnancy, trauma, drug addiction, prostitution, sexually transmitted diseases, and physical harm. To address the variety of complex health problems facing homeless women, a coordinated system of care with a strong outreach component and on-site providers in shelter systems must be in place (17, 18).

Women in Migrant and "Border" Communities

Low-income residents of the southern U.S. border areas, such as the Mexico–Texas border, are exposed to numerous factors that make them exceptionally vulnerable to poor health. These populations often are culturally isolated from the majority U.S. population, do not speak English, and live in conditions of poverty, environmental hazards, and deficiencies in medical care. Women with children in these communities often bear the brunt of these conditions because they are not able to migrate for seasonal work and often do not qualify for Federal or local assistance (19). The socioeconomic and health status of United States–Mexico border residents is important for the stability and well-being of both communities.

Lesbians

Because of societal pressures, lesbians are often reluctant to seek necessary social or health services. Lesbians may experience stigmatization, marginalization, and sometimes overt hostility in family as well as social settings. There have been few studies and surveys to identify specific health needs of lesbians; thus, knowledge of their physical and



Source: National Center for Health Statistics. Advance report of final mortality statistics, 1991. 1993.

psychosocial health needs is limited. Lesbians face barriers in gaining access to health services and experience stress within the health care system. They often encounter bias on the part of health care providers and, as a result, avoid contact. Thus lesbians often do not receive routine and preventive care or early warning of abnormalities. Lesbians are less likely than heterosexual women to receive routine Pap tests. Some lesbians may be at a slightly higher risk for breast, ovarian, and endometrial cancers because they may not have had children or used oral contraceptives. In addition, lesbians are at higher risk than the general population for cigarette smoking, heavy alcohol consumption, and substance abuse. Lesbians are also particularly subject to interpersonal violence and battery (20, 21, 22).

Finding 2: Demographic shifts will affect health trends in the United States in general and the health status of women specifically.

- **As the older segment of the population grows, women will continue to significantly outnumber men in that age bracket. Therefore, women in increasing and disproportionate numbers will be faced with the health concerns that affect the elderly and that lead to a frail state.**

- **The proportion of the U.S. population made up of racial and ethnic minorities is increasing dramatically and is expected to continue to do so. Because women of certain ethnic and racial groups have a lower life expectancy than Caucasian women and experience more health problems and poorer access to care, this demographic shift will have a profound effect on women's health.**

- **The number of single-parent families headed by women is growing dramatically. A significantly greater percentage of single-parent families live in poverty as compared with other segments of the population. This phenomenon has important health ramifications.**

- **Because of their socioeconomic status and position in the workforce, women are twice as likely as men to be underinsured for their health care needs.**

Physicians of the next century will be providing care to a population whose characteristics will differ markedly from the population in the United States today. In addition to increasing in size by almost one-third over the next 30 years, the population will be older and much more racially and ethnically diverse (23). These projected demographic trends will influence significantly the patterns of disease and the health care of the population, especially women.

Aging of the Population

At the turn of the century, the average life expectancy of women in the United States was 48.3 years, compared with 46.3 years in men (24). Since then, the gender gap in life expectancy has widened considerably; in 1991, life expectancy for women was 78.9 years, compared with 72.0 years in men (Fig. 4) (23). As a result, the proportion of the population composed of women rises progressively with age. Currently, women represent approximately 60% of the population over age 65 and 72% of that over 85 (Table 6).

The continued upward trend in life expectancy and the increased numbers of the aged resulting from the maturation of the baby boom generation will contribute to a population explosion in the older age groups after the first decade of the next century. For the first time in the history of the United States, the age group under 18 years will comprise less than 50% of the population. In the next two to three decades, the fastest growing age group will be the population ages 85 years and older, which is expected to double in size between 1990 and

Table 6. Percentage of Women Within the Aging Population

Year	*Age 65+*	*Age 85+*
1900	49.5%	55.6%
1980	59.7%	69.6%
1990	59.7%	72.0%
2020	60.0%	73.0%

Source: Report of the National Institutes of Health. Opportunities for Research on Women's Health (September 4-6, 1991, Hunt Valley, MD). Office of Research on Women's Health, Office of the Director, National Institutes of Health, 1991.

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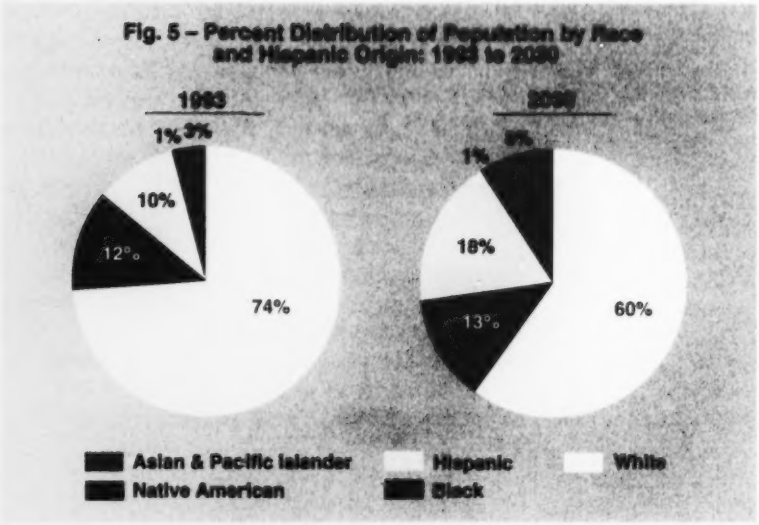


Source: Day J. Population Projections of the United States by Age, Race, and Hispanic Origin, 1993 to 2050. U.S. Bureau of the Census, 1993.

2020. By 2020, women are expected to outnumber men by 1.5 to 1 in the age groups over 65 years and by nearly 3 to 1 in those over 85 years (23).

Although these statistics reflect favorably on the longevity of women, when considered in the context of the current overall health profile of women and projected demographic trends, they are a cause for concern. They indicate that women in increasing and disproportionate numbers will be faced with the health concerns that are seen in the very old and that lead to a frail state and to a loss of self-esteem, dependency, and being institutionalized. Of the current 1.5 million residents in nursing homes, nearly three-fourths are women. It is estimated that one-half of all women now age 65 will spend some time in a nursing home. In addition, among the 7 million non-institutionalized women over age 75, 2 million are completely or partially limited in their ability to carry on major activities because of chronic conditions (25). These figures are of immense public health interest, not only because of the planning for the health resources that will be necessary to care for the needs of this aging population, but also in preparing physicians to address these needs.

Racial and Ethnic Diversity

Along with a shift in the age of the population, the cultural and ethnic composition of the United States is projected to change dramatically over the next 50 years. The U.S. population is experiencing and will continue to experience a dramatic increase in the percentage of racial and ethnic minorities (Fig. 5). If current trends continue, Caucasians, who currently make up three-quarters of the population, will comprise only 60% of the population in 2030 and 53% in 2050. Of the minority groups, the African-American population will double in size. The Hispanic population is growing even faster and by 2010 will become the second-largest racial and ethnic group in the United States. The fastest growing race and ethnic group is the Asian and Pacific Islander population (23).

The available epidemiologic data suggest health varies by cultural background and that disease susceptibility patterns vary among racial and ethnic subgroups. Regardless of the specific groups to which they belong, ethnic minority women have a lower life expectancy than Caucasian women and experience certain health problems disproportionately. Differences are most pronounced in areas related to the reproductive system and childbearing, the occurrence and course of chronic diseases, the incidence and outcome of cancer, and acts of violence. Infection with HIV and homelessness have recently become additional special concerns that disproportionately affect minority women (2, 10, 24). Following are striking examples of these disparities (24):

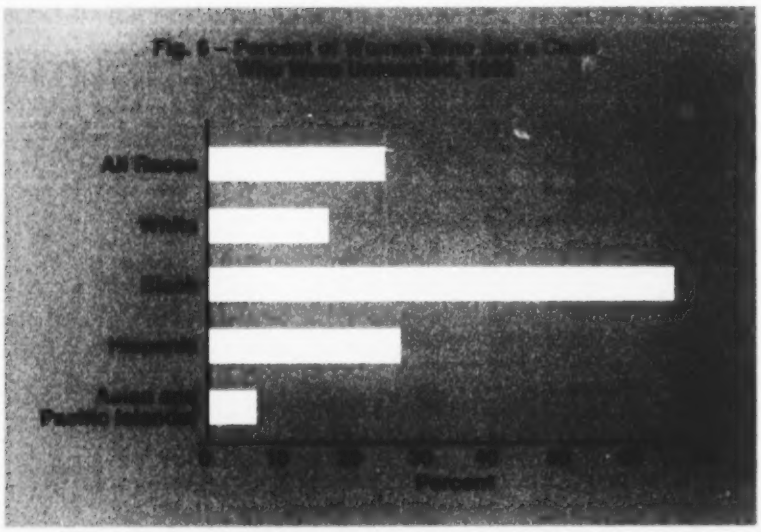
- Ethnic minority women have the highest infant and maternal mortality rates. The death rates from complications of pregnancy and childbearing are highest for African-American women, for whom they are 3.5 times greater than for Caucasian women.
- Many chronic diseases, such as diabetes mellitus, hypertension, and cardiovascular disease, are more prevalent in minority women. For instance, the prevalence of non-insulin-dependent diabetes mellitus is two to five times higher in Native American women than in other populations.
- Death from stroke occurs twice as often in African-American women as in Caucasian women. Rates of death from coronary heart disease are higher for African-American women than for Caucasian women.
- Even though the incidence of breast cancer is lower for African-American women than for Caucasian women, death rates from breast cancer are higher for African-American women. Hispanic women have a high risk of cervical and stomach cancer.
- Among the major causes of mortality in women, the rate of death from infection with HIV has increased the most. Rates of HIV-related deaths for African-American women are 10 times those for Caucasian women, and the young are disproportionately affected.

Meeting the health needs of an increasingly diverse population will be a special challenge; traditionally, minority populations have been underserved by health care and social support systems. In addition, it has been pointed out that the ability to understand the health needs of minorities in a broader cultural context

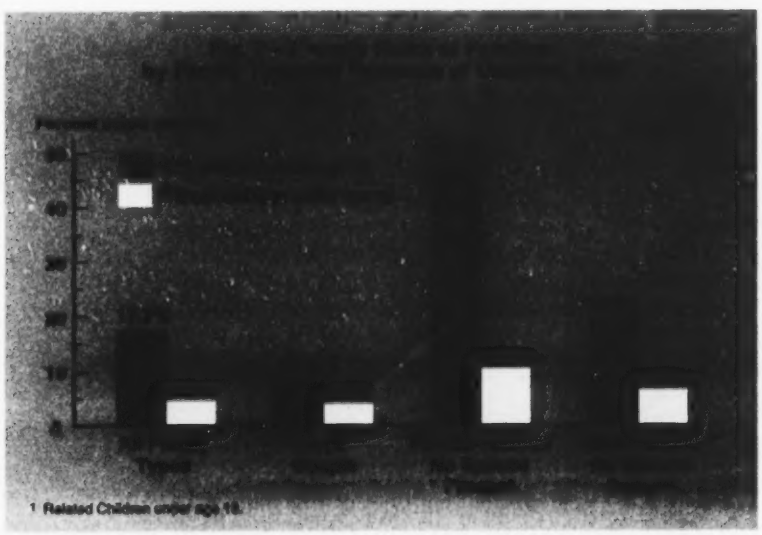
has been limited by the underrepresentation of minorities in the medical professions (26). As the proportion of minorities in the population increases, it is essential that medical school classes, academic training programs, and, ultimately, practicing physicians reflect the diversity of the population. All physicians should be trained to address the health concerns of all segments of society. Appreciation of diversity is a central tenet of the current call for reform in women's health care (27).

Changing Family Structure

Efforts to increase knowledge about women's health issues require an integrated approach that not only acknowledges the diversity among women, but also considers the social factors that influence their lives. One of the important social trends over the past 50 years is the increasing number of women in the workforce. Between 1960 and 1992, the percentage of women age 16 and over who were in the labor force rose from 38% to 58%. In the 20-year span between 1971 and 1991, the total number of employed women increased by 60%, and the number who were employed full time doubled (28). Family roles have changed dramatically with increasing female participation in the labor force. Women have historically supplied much unpaid caretaking for the family, including both children and the elderly, in the home. Such caretaking roles are inevitably changing with the increasing proportion of women working outside of the home.



Source: Bachu A. Fertility of American Women, June 1992. U.S. Bureau of the Census, 1993



U.S. Bureau of the Census. Poverty in the UnitedStates, 1991, 1992

The family structure is also being changed by the increasing number of single-parent families headed by women, especially minority women. Many of these women have never married, and many others are divorced or widowed. According to the 1992 Bureau of the Census survey, 24% of all women ages 15 to 44 who gave birth in 1992 were unmarried (Fig. 6) (29).

Two of every three births to adolescents are out of wedlock. The percentage of adolescent pregnancies continues to be high, especially among African-American women, among whom it was 23% in 1992 (29). In addition to age group variations, there are significant racial and ethnic differences in the proportion of children born to unmarried women. In 1992, two-thirds of all births to African-American women and one-fourth of all births to Hispanic women were to unmarried women, compared with 17% of all births to Caucasian women. Although poor, uneducated, and minority women are still most likely to become single mothers, the proportion of Caucasian, college-educated women who became single mothers more than doubled over the past decade.

Many single-parent families live in poverty (Fig. 7). According to the 1992 Bureau of the Census report, 47% of the families headed by single women had incomes below the federally defined poverty level (29). Socioeconomic factors are major indicators of health; for many health outcomes, poverty and lack of education are more important determinants of health than race (30, 31, 32). Although it is difficult to segregate the relative effects of income, educational level, and standard of living from behavioral and biological factors that influence health, it has become increasingly clear that certain markers of lower socioeconomic status, such as the lack of availability of health insurance and limited access to health care, are crucial barriers that contribute to increasing class differences in health status (13, 33, 34, 35).

Inadequate Health Insurance Coverage

Women are particularly vulnerable to economic and social forces. For example, it has been reported

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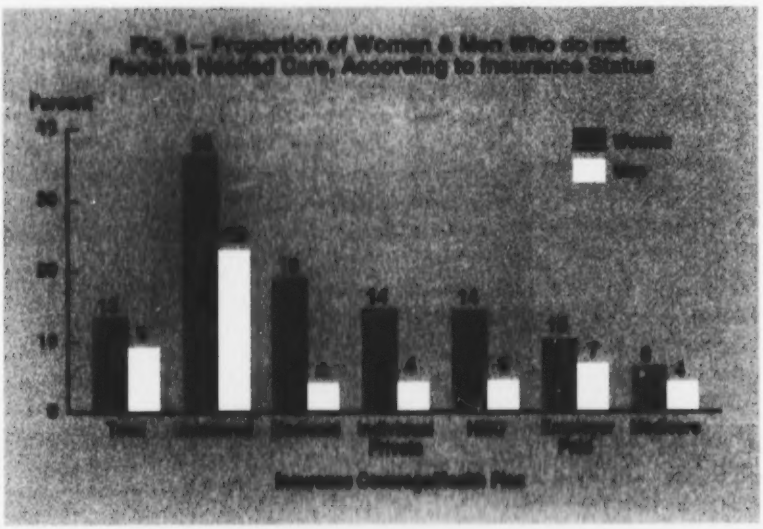
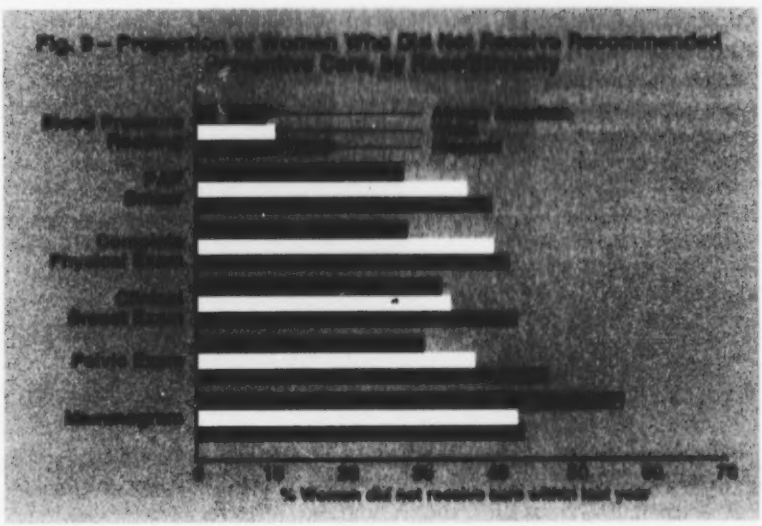


Source: Survey of Women's Health. The Commonwealth Fund, 1993



Source: Survey of Women's Health. The Commonwealth Fund, 1993

that women in the workforce are twice as likely as men to be underinsured because of their lower incomes, part-time status, or dependence on coverage through a spouse. Even with insurance, coverage may be inadequate for prenatal care and delivery, preventive services, and mental health care. Even women with insurance may not receive needed routine and comprehensive care.

In spite of the presence of Medicaid programs in all states, 14 million women of childbearing age have no medical coverage, and among those with insurance, 5 million have no coverage for prenatal care and delivery (34). Minority women especially are more likely to be poor and to lack medical insurance. According to a recent survey, 22% of Hispanic women and 16% of African-American women lacked any form of health coverage compared with 13% of Caucasian women (13).

The confluence of social factors and difficulties in accessing care has profound effects on the health of women. For example, it has contributed to the failure to meet the 1990 U.S. health objectives of reducing significantly the percentage of women who do not receive prenatal care, the number of low-birth-weight infants, and the proportion of unplanned births to women in poverty, especially to girls under the age of 14 (26). In addition, despite gains across age, ethnic, and racial groups in the use of preventive services, a number of studies now document that vulnerable socioeconomic status and inadequate health insurance remain significant barriers to health care for women (13, 34, 35). In a recent survey, 36% of uninsured women reported that they had not received needed care within the year compared with 14% who had private insurance (Fig. 8) (13). Hispanic women in particular reported lower rates of certain cancer screening assessments and general health services than either African-American or Caucasian women (Fig. 9). African-American women, however, had the lowest rates for screening mammography (13).

The consequences of reduced access to care and inadequate insurance are disturbingly apparent in a recent study that examined the relationship between health insurance coverage and outcome from breast cancer. In this study, women with inadequate or no insurance had more advanced disease at the time of diagnosis and worse survival rates than women with private insurance (Fig. 10) (33). Although the effects of differences in breast cancer screening and treatment could not be evaluated, the availability of health insurance, or lack of such, was clearly a determinant in the progression of this disease. Based on their findings, the authors stressed that efforts to improve the outcome for breast cancer need to include attention to health policy issues, such as equal access to breast cancer screening and the provision of optimal treatment for all women.

It appears evident that health care coverage is essential to the goal of addressing the basic physical and mental health needs of women. Otherwise, it will be difficult to ensure that all women receive complete and coordinated care for their routine and comprehensive health concerns.

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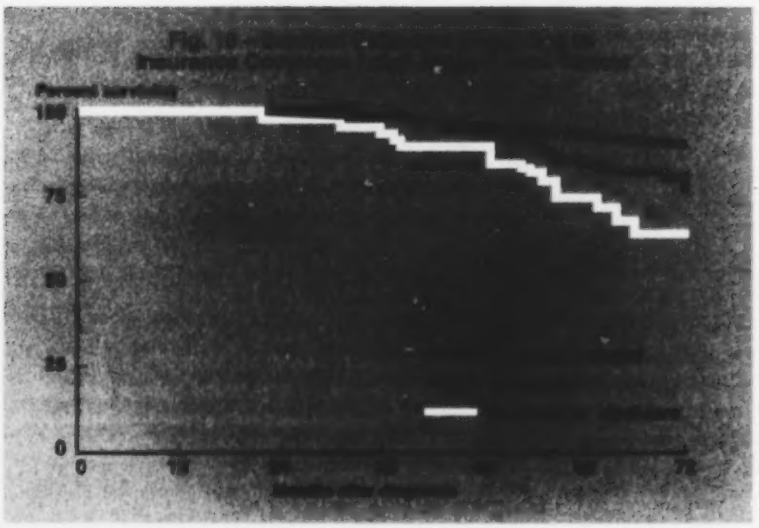

Source: Ayanian JZ, Kohler BA, Abe T, Epstein AM. N Engl J Med 1993;329:326-331

Finding 3: Many women receive incomplete and poorly coordinated care for their routine and comprehensive health concerns. Barriers include inadequate health insurance, fragmented delivery of primary care services, and deficiencies in physician training.

- **Many women have difficulty obtaining comprehensive and coordinated care to meet the full range of biopsychosocial health care needs for a variety of reasons.**

- **In addition to inadequate health insurance, barriers to care include deficiencies in physician training, fragmented systems of primary care, and the categorization of women's health needs into "reproductive" and "all other."**

Women are the primary users of the health care system and are more likely than men to report having a regular source of care. Compared with men, women average one-third more physician visits, one-fourth more hospital discharges, and 5% more hospital days. Women represent 60% of Medicare beneficiaries and the vast majority of adults who receive Medicaid benefits (36). Women are more likely than men to have diagnostic procedures performed during visits to physicians, and for women, one-third of these procedures are related to reproductive health (37). In part related to their reproductive health needs, health maintenance activities are recommended more frequently for women than men (38). In addition to care for reproductive issues, data on ambulatory care demonstrate that women seek care for a spectrum of physical, mental, and social needs.

Despite these realities of usage, the health care system has not been particularly responsive to the special needs of women. As consumers of health care, women have become increasingly dissatisfied (13). Many women share the perception that some of their medical needs are not being met adequately and are no longer willing to accept care that reflects biased attitudes. In a national survey of 2,500 women from all socioeconomic backgrounds, two of five women reported having changed physicians at some time because of dissatisfaction with their care. Some of the reasons women gave for changing physicians are revealing. One-third reported communication problems, one-fourth reported that they were "talked down" to or "treated like a child," and 17% felt that a medical complaint was trivialized by their being told that it was "all in their head." As a result of these experiences, one of ten women had at some time not felt comfortable discussing a medical problem. Of great concern, 5% of all women reported that a physician had made an offensive sexual remark or inappropriate advance (13).

Fragmented Routine Care to Women

From puberty and adolescence and throughout all stages of their lives, a major portion of women's health has traditionally been defined by the condition and function of their reproductive organs and childbearing cycles. Although these are fundamental parts of women's health, the ambulatory morbidity and mortality data in this report demonstrate a broader spectrum of women's physical and psychosocial health conditions that should be addressed.

From a health services standpoint, care for women's common health problems has been fragmented into at least two parts —gynecologic and obstetric services and routine care for other health needs. Ideally, health services should be provided in a comprehensive and coordinated manner. Common problems could be addressed by a generalist physician or other primary care provider (e.g., physician assistant, nurse practitioner) who is broadly trained and who coordinates complete care with other members of the health care team. The reality seems to be that many or most women receive care from several providers who have divergent or overlapping practice patterns and who may or may not communicate about her care.

An analysis of data from NAMCS suggests that each of the three physician specialist groups who provide the bulk of routine care for the common problems of adult women offers a different spectrum of services (38). The percentage distributions of the principal nonobstetric diagnoses for women ages 15 years and older in the disciplines of family/general practice, internal medicine, and obstetrics–gynecology are shown in Tables 7–9. In general, the most frequent

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Table 7. Office Visits to Family and General Practitioners by Principal Diagnosis

Diagnosis	*Percent*	*Diagnosis*	*Percent*
Hypertension	13.9	Obesity	2.3
Acute urinary tract infection	6.9	Headache	2.2
Diabetes	5.7	Vaginitis	2.1
Sinusitis	4.8	Asthma	2.1
Arthritis	4.8	Depression	2.1
Urinary tract infection	4.2	LS strain	1.8
Bronchitis	4.1	Lipid disorders	1.7
General exam	3.8	Neck sprain	1.6
Pharyngitis	3.7	Allergies	1.6
Viral infection	3.1	Fungal infection*	1.5
Otitis media	2.3	Influenza	1.5
Other respiratory disease	2.3		
		Total	***80.2***

* Includes candidal vaginitis

Source: Courtesy of BA Bartmen, 1994

Table 8. Office Visits to Internists by Principal Diagnosis

Diagnosis	*Percent*	*Diagnosis*	*Percent*
Hypertension	16.7	Asthma	2.6
Arthritis	9.2	General exam	2.5
Diabetes	7.7	Dizziness	2.5
Acute urinary tract infection	6.4	Lipid disorders	2.4
Bronchitis	3.5	Abdominal pain	2.2
Urinary tract infection	3.4	Headache	2.0
Sinusitis	3.2	Gastritis	2.0
Coronary artery disease	2.8	Anxiety	1.9
Thyroid diseases	2.7		
		Total	***80.5***

Source: Courtesy of BA Bartmen, 1994

diagnoses reported by family/general physicians and internists comprised both common gynecologic (e.g., fungal infections, urinary tract infection, vaginitis) and nongynecologic conditions (Tables 7&8), whereas those by obstetrician–gynecologists were related to gynecologic conditions (Table 9).

Visits to primary care physicians by specialty for selected diagnoses are shown in Table 10. In general, care of common nongynecologic conditions in women constituted a significant proportion of visits to general practitioners/family physicians and a smaller proportion of visits to obstetrician–gynecologists. In contrast, over one-half of general medical examinations (57%) and two-thirds of routine gynecologic services (67%) were provided by gynecologists. Family/general physicians also provided a significant portion of gynecologic services, whereas internists appear to provide fewer gynecologic services to women. Specialty-specific differences in the provision of routine care have been identified for at least a decade (39). As a group, family physicians appear to provide a wider spectrum of routine care to adult women than do obstetrician–gynecologists or internists. However, this aggregate database does not provide the percentage of physicians in each of the three specialties who provide both obstetric–gynecologic and other routine care to women.

Table 9. Office Visits to Gynecologists by Principal Diagnosis

Diagnosis	*Percent*
General exam	19.1
Dysfunctional uterine bleeding	9.7
Gynecologic exam	8.2
Menopause	8.1
Vaginitis	7.9
Postoperative follow-up	5.0
Breast disorder	4.3
Urinary tract infection	3.6
Infertility	3.5
Abnormal Pap test	3.4
Fungal infection*	3.1
Dysmenorrhea	3.0
Total	***78.9***

* Includes candidal vaginitis

Source: Courtesy of BA Bartmen, 1994

It is reasonable to assume that a significant number of internists and obstetrician–gynecologists do provide comprehensive care and that some general practitioners/family physicians do not. Variation in practice among the specialties and among individuals within the specialties in regard to women's health may leave women with health care gaps or coordinating their own care as they see multiple providers.

Inconsistent Delivery of Preventive Services

An emphasis on preventive care is essential to women's health and is the cornerstone of the national health agenda (8). Although women in the NHIS averaged approximately seven physician contacts a year for acute and chronic illnesses, frequent involvement in the health care system does not necessarily guarantee appropriate and comprehensive preventive, diagnostic, and curative care (34). Several studies now document inconsistencies and even inadequacies in the provision of preventive care to women (36, 40, 41, 42). Although the figures vary depending on the population studied and the methodologies used, these studies demonstrate that as many as one-third of women do not receive the services necessary to detect breast, cervical, and other treatable cancers. A study by Lurie et al. reveals that the gender of the physician makes a difference in the extent of preventive care services delivered to women patients (43). Patients of women internists and family physicians were more likely to undergo Pap tests and mammograms than patients of male physicians in those specialties.

The deficiencies in preventive care are not limited to any one specialty. One study evaluated the services provided by family physicians and internists to patients requesting a periodic health examination (41). The participating physicians were enrolled in a National Cancer Institute study of the early detection and prevention of cancer. Patients were trained to simulate selected risk factors for cancer and to evaluate the physicians' response to their request for a checkup. Even of this highly select group of physicians educated in cancer prevention guidelines, more than one-third did not perform a breast examination unless prompted to do so by the patient. More than 20% did not address

Table 10. Office-Based Visits to Physicians by Selected Diagnoses

		Percent of Total		
Diagnosis	*Visits in 1,000s*	*Practice*	*Internal Medicine*	*Gynecology*
Upper respiratory disorders	8,195	72	24	3
Urinary tract infections	1,050	60	23	17
Asthma	1,420	70	30	--
Diabetes Mellitus	2,746	61	39	--
Hypertension	7,389	62	35	3
General exam	7,532	30	13	57
Gynecologic disorders	17,270	28	4	67

Source: Bartman BA, Weiss KB. J Women's Health 1993; 2:261–268.

smoking cessation in women who smoked, and less than 20% discussed nutritional issues.

Data from the NAMCS suggest that variations exist in the provision of preventive services among physicians providing routine care of women. An examination of the health maintenance practices of each discipline (Table 11) suggests that obstetrician–gynecologists are nearly twice as likely to perform a Pap test, pelvic examination, breast examination, and blood pressure measurement during a general medical examination as either family physicians or internists, whereas internists are more likely to screen for nonreproductive medical disorders.

Conclusions from the NAMCS database must be derived with caution, however. It does not provide ongoing information about individual patients, so it is not possible to determine whether women received additional services at previous or subsequent visits or from more than one physician. Also, it does not allow one to compare "actual" with "recommended" delivery of periodic health examinations. Some women may receive more or fewer routine preventive services than necessary. Furthermore, recommendations for routine preventive care of women vary among physician specialty groups and the U.S. Preventive Services Task Force Report guidelines. However, as noted by the authors of the cited study on physician practice by specialty, "these variations in primary care between the specialty groups and others ... represent a diminished opportunity for women to receive standardized comprehensive care ... and may result in women receiving duplicate care or foregoing recommended preventive services" (38).

These findings have important implications for the health care of women. The lack of uniform standards of primary care, especially regarding preventive services, and the splintering of routine care among disciplines may result in poorly coordinated and incomplete care. Faced with potentially duplicative or inadequate services, women must increasingly take responsibility for directing and monitoring their health care.

The Role and Education of the Generalist Physician

In its Third and Fourth Reports, COGME indicated that basic health care needs are best served by an integrated delivery system based on a broadly trained generalist physicians (or broadly trained physician assistants or nurse practitioners) acting as the primary care providers and coordinating care with well-trained physician specialists and other health professionals to meet total needs. This vision of optimal care delivery applies to women and men alike.

Generalist physicians should be able to use a biopsychosocial model to provide comprehensive, high-quality care in a variety of settings to women with a spectrum of health-related conditions and concerns. A critical and essential core of the generalist physician's practice is primary care. In an effort to help standardize and improve the quality of comprehensive primary care provided by generalist physicians, COGME identified, in its Third Report, an essential set of core practice competencies. COGME recommended that generalist physicians who serve in this role in the care of women should be trained, should practice, and should receive continuing education to enable them to perform the following functions:

- Provide care for the general population in office, hospital, and residential settings
- Provide comprehensive age-specific preventive care
- Evaluate and diagnose common complaints
- Treat common acute conditions
- Provide ongoing care for chronic illnesses and behavioral problems
- Seek appropriate consultation for specialized services

One way to determine whether physicians are being trained to assume this role is to examine the Program Requirements for Residency Training of individual specialties. The Council's conclusion that family physicians, general internists, and general pediatricians are properly trained to function as generalist physicians is supported by an application of these competencies to allopathic Residency Program Requirements listed in the Accreditation Council for Graduate Medical Education (44).

Several sources document that, for reasons specific to each one, the medical disciplines that provide the preponderance of front-line care to women—internal medicine, pediatrics, obstetrics–gynecology, and family practice—appear to be moving toward a common vision of the requisite competencies and residency training components needed to provide quality, comprehensive care to address common health concerns of women (12, 13, 16, 32, 34, 35). This may, in part, be driven by the growing influence of managed care plans and their similar requirements for generalist practice (45).

In part, as a result of the profession's recognition of advances in the approach to infertility, gynecologic cancers, and high-risk obstetric care, obstetrics–gynecology is more often identified in academic circles as a surgical discipline. However, one-half of practicing obstetricians–gynecologists currently con-

Table 11. Preventive Services Delivered by Physicians

	Percent of General Medical Exam Visits		
	Family and General Practice	*Internal Medicine*	*Gynecology*
Pap test	35	32	77
Pelvic exam	33	30	94
Breast exam	34	47	86
Cholesterol	15	30	11
Blood pressure	70	83	91
Urinalysis	50	47	50
Other blood tests	31	48	22
Mammography*	20	34	26
Rectal exam*	18	48	25
Stool guaiac*	34	93	18

* Aged 45–64 years

Source: Bartman BA, Weiss KB. J Women's Health. 1993; 2:261–268.

sider primary care to be their major mode of practice (42). In addition to traditional medical and surgical services related to the female reproductive system, these physicians provide several aspects of primary care, such as preventive services and, to a limited extent, manage conditions outside the reproductive system (Tables 10 and 11).

In its continued development of guidelines for residency training, the Residency Review Committee for Obstetrics–Gynecology has substantially expanded its program requirements to prepare residents with a much broader set of generalist skills. Specifically, program requirements have been expanded to require that every resident perform the following functions:

- Serve as the primary care physician to a panel of female patients through a continuity practice lasting at least one-half day weekly over 3 of the 4 years of training
- Receive appropriate didactic instruction and clinical experience in the management of the problems of women in the postreproductive age group
- Complete a 4-month rotation in general medicine (i.e., internal medicine or family practice), a 1-month rotation in emergency medicine, and a 1-month rotation in geriatric medicine (46).

In internal medicine, the historical hospital-based model provided the traditional context for education and practice with increasing subspecialization. Over the past decade there has been a shift in the focus of residency training in internal medicine from the acute care in-hospital model to the outpatient setting. This shift has been accompanied by the reemergence of general internists who are qualified to provide primary care to patients. The rebirth of the general internist has been accompanied by an increased sensitivity to and emphasis on community-based primary care training and practice. At the same time, the internal medicine profession has recognized the need for further development and emphasis in women's health and is striving for consistency in this area. Today, competence in the care of gynecologic conditions is required in internal medicine residency training (40).

Program requirements for family medicine training attempt to provide comprehensive training in all areas of generalist physician care. They require that every family medicine resident be trained to manage the common gynecologic conditions that occur throughout a woman's life cycle. Family physicians are trained to provide routine prenatal, delivery, and postpartum care. In addition to the formal program requirements, recommended core educational guidelines for residents have been developed in women's health and obstetrics and gynecology (47).

Pediatric residency program requirements currently require that all residents be trained in the comprehensive care of girls from infancy through adolescence. New draft guidelines are being proposed which would increase the time for training in ambulatory settings and generalist skills. In addition, increased time is allocated in behavioral, developmental, and

adolescent medicine, as well as in reproductive health. Within the medical profession and the health care system, the growing consensus about the requisite training and practice skills of the generalist physician is quite hopeful. Although these changes will take time, they move toward a standard of comprehensive care for women's common physical and psychosocial needs that is realistic and attainable.

Finding 4: Changes in undergraduate and graduate medical education, in addition to continuing medical education, are needed to address adequately the comprehensive health needs of women.

- Traditional medical educational models are not adequate in addressing the effects of gender on health and disease at the basic science and clinical levels and across medical disciplines and educational levels.
- Fundamental to effective reform is the incorporation of an interdisciplinary approach that addresses the biological, social, psychological, and emotional needs of women.
- Basic competency in women's health should be expected of all physicians. The breadth and depth of levels of competence required vary depending on the level of the educational process and the specific discipline under consideration.

Education in the Care of Women

Developments in women's health will depend on fundamental changes in medical education that cross traditional departmental boundaries and foster innovations in education, clinical care, and scholarship (48). Such advances require the establishment of a new methodology for curriculum development and teaching, the formation of collaborative relationships and alliances, and the development of interdisciplinary clinical models. These concepts run counter to the structure of traditional medical institutions, with their continual struggle to balance education and patient care and where scholarship in the biosciences is most highly valued. Bold new initiatives are needed at all levels.

Undergraduate Medical Education

In evaluating medical school curricula, it is difficult to assess either the women's health content of preclinical courses or training in women's health during the clinical years. Although many schools have interdisciplinary curriculum committees, not all have a central review and an ongoing planning process that are separate from the domain of individual departments. Thus, faculty as well as medical school administrators are often unaware of the specific course content offered by each department. Likewise, in the clinical years, the knowledge and skills learned during clinical clerkships may overlap or conflict with or leave gaps in a student's preparation for practice. Because of these problems, there are no reliable data on the women's health content of medical school curricula. A recent article reported that fewer than one-fourth of the medical schools in the United States offered an elective in women's health (49). Most courses were taught by departments other than internal medicine, family medicine, or obstetrics and gynecology and were based on specific topics, such as violence against women and eating disorders, or on psychosocial issues concerning women's relationship to the health care system. Few courses appeared to provide a comprehensive overview or integrated clinical experience in women's health.

Congress has indicated an interest in reviewing how women's health issues are incorporated into the curricula in medical schools. In a 1993 Senate Appropriations report, NIH, ORWH, and the Health Resources and Services Administration were directed to evaluate the extent to which women's health is addressed in medical school curricula. Both the Senate and House Appropriations Committees made similar requests in 1994. A final report including recommendations for a core curriculum on women's health and the results from a national survey to determine the extent of women's health education in medical schools will be submitted to Congress in 1995 ("Recommendations for a Core Curriculum on Women's Health" and "Medical School Curricula and Women's Health")

Graduate Medical Education/Residency Training

The specifics of practice style are incorporated most intensely by individual physicians during their residencies. An overview of residency training issues involving women's health was provided in the previous section, "The Role and Education of the Generalist Physician." The extent to which a discipline trains residents to provide comprehensive care to women closely parallels the degree to which it prepares residents for primary care practice (44). A recent study identified training components for generalist care and analyzed these components according to individual specialty requirements. Proposed changes in some discipline-based residency requirements should enhance primary care skills.

Continuing Medical Education

Physicians are expected to embark on a lifelong learning process to remain current in their practice and consultation activities. The capabilities of physicians are scrutinized periodically by professional societies, accrediting functions, certifying boards, and licensing

bodies after formal undergraduate and graduate training programs have been completed. The information explosion, the increasing availability of telecommunications to relay information, and the development of new technology require that physicians be personally diligent in maintaining and enhancing their professional and clinical skills and abilities. Physicians use continuing medical education programs to confirm that they have mastered critical content in specific areas, to incorporate new developments into their practice, to master advanced techniques, and to obtain knowledge in new content areas (50). Considering the increasing information on women's health, physicians will need to take advantage of continuing medical education activities to provide quality care to women. This is particularly important because of the constantly evolving and interdisciplinary nature of women's health care. A number of disciplines, both allopathic and osteopathic, now require that physicians complete a minimum number of continuing medical education hours and pass an examination to be recertified.

Curriculum Content and Structure

As a first step toward improving the education and training of physicians in women's health, the educational philosophy, scope, and content of a comprehensive women's health curriculum needs to be developed. A core curriculum in women's health will help define the qualifications that physicians need to care for women as well as serve as a conceptual framework for medical institutions interested in restructuring medical school curricula, developing or enhancing residency and fellowship training programs, or planning research initiatives in women's health. The goal is to incorporate gender-related women's health education and information into medical education at all levels—undergraduate, graduate, and postgraduate, and thereby improve women's health. Curriculum objectives should be multidisciplinary and include psychosocial and behavioral components, emphasize health education and prevention, and be based on a life-span approach.

Clinical Models for Training

In addition to restructuring medical curricula, new clinical models are needed to provide training for physicians in comprehensive care for women. In developing these models, the collaboration of various disciplines is necessary to pool resources and knowledge and to foster innovations in education, clinical care, and research. Dialogue will be essential in providing guidelines to academic institutions as well as in influencing health care policy and funding at the national level.

Faculty Development

The advancement of academic programs in women's health depends partly on the development of faculty with the ability to view women's health broadly and creatively, integrate content from several disciplines, forge effective interdisciplinary relationships, serve as appropriate role models for students and residents from a variety of backgrounds, and use these skills as a basis for scholarship (48). Although these attributes historically have not been rewarded in academic medicine, they are regarded with great favor in some current programs. To recruit and retain faculty in the area of women's health, fundamental changes are needed in the way scholarship is viewed and faculty members are rewarded. Institutional support and encouragement in terms of faculty rank and compensation are critical to these efforts.

Barriers to Change

Regardless of the strategies used or models adopted, complex administrative and policy issues exist. For example, if multidisciplinary centers or programs in women's health develop, which of the primary care disciplines, if any, should serve as their academic base? The answer to this question will most likely depend on the resources and local politics at each institution. Funding to support medical education and training initiatives is also difficult to obtain. At the Federal level, there are currently no existing or planned initiatives to fund fellowship programs or faculty development in women's health or to support curriculum development in this area; the major foundations that have traditionally funded changes in medical school curricula and training programs are not active in this area of women's health. In an era of change in national health care policy and funding priorities, recent statements from advisory groups calling for an increase in the proportion of primary care physicians may be instrumental in defining the structure and funding of programs in women's health (51, 52). Finally, for academic physicians working in the area of women's health, status and promotion for faculty who cross disciplines, many of whom will be women, will challenge existing inequities confronting women.

Finding 5: Gender inequalities and bias in research design and implementation, through exclusion or underrepresentation of women in clinical studies, have contributed to knowledge gaps concerning women's health care and the needs of women and may lead to suboptimal care.

- **As with education, research plays a significant role in preparing the practitioner for the challenges of practice.**
- **Research provides the foundation for improvements in clinical practice.**

- **Further research is required to raise awareness of gender-specific aspects of health.**

The Importance of Gender

The concept of women's health requires a reassessment of the importance of gender differences in health and disease. A complex interaction exists between hormones, normal and abnormal physiology, and the physical and emotional well-being of women. As early as the embryonic period, there are structural differences between females and males. During the reproductive years, these differences become more apparent as hormones exert an influence on sexual development and reproductive function, creating additional health issues unique to women. As women age and hormone levels decrease during menopause, women's risk factors for disease change dramatically and become more similar to those of men. Although women develop the diseases that affect men, biological mechanisms and psychosocial factors influence the course of disease differently in women (24).

Gender Inequities in Research

Unfortunately, most of the information used to make clinical decisions in women is based on studies conducted primarily in men (53, 54, 55). Women have been excluded from research on diseases that are important to both sexes due to misconceptions about women's health, to legal and ethical issues, and to cultural biases. Because women, on average, live longer than men and are affected by major diseases at a later age, it is often perceived incorrectly that women are healthier than men. In fact, throughout life women experience poorer health than men, especially in the advanced years (24). The exclusion of reproductive-age women from clinical studies followed the thalidomide and diethylstilbestrol tragedies of the 1970s and reflected the concerns that government regulatory agencies had about studies conducted in women of childbearing age because of potential risks to the mother and fetus (56). Some argued that cyclic changes in sex hormones during the menstrual cycle and major changes in hormone levels, especially during the menopause, made women more difficult to study than men and increased the costs of clinical studies. It has been pointed out, however, that these arguments are also the very reasons more information on women is needed (57). For example, differences in body size and composition between women and men and the influence of endogenous and exogenous hormones have important effects on drug metabolism and interactions.

While the role of sexism is difficult to define, subtle forms of gender bias appear to have influenced the design and conduct of clinical studies. As stated in the recent Institute of Medicine report on ethical and legal issues involved in the inclusion of women in clinical studies, "male bias (observer bias caused by adopting a male perspective and habit of thought) and the male norm (the tendency to use men as the standard and to see females as deviant or problematic, even in studying diseases that affect both sexes) ... have been thought to contribute to a predominant focus on men's health problems and on men as research participants" (58, 59).

The lack of research concerning women has important implications. Information based primarily on studies carried out on men may be applied inappropriately to women and result in different standards of care (57). These concerns have been highlighted most extensively in the area of coronary heart disease in women (60, 61, 62, 63, 64, 65, 66, 67).

The first step toward implementing change is acknowledging the problem. It is now well recognized that gender bias exists in biomedical research and, consequently, many conditions in women have been understudied, women's health research has been inadequately funded, and women have been excluded from studies that are important to both women and men. Although new information concerning common or previously ignored conditions in women is beginning to emerge, significant gaps remain in knowledge regarding important women's health issues.

Concerted efforts at the national level are under way to redress these inequities (68, 69). One initiative of note is the Women's Health Initiative conducted out of the ORWH of NIH. This study will examine the effects of dietary, behavioral, and drug interventions on the most common causes of death, disability, and frailty in postmenopausal women of all races and socioeconomic backgrounds. Initiated in 1992, interventions are being tested through the use of clinical trials. Considered to be the largest and most comprehensive study of its kind, the Women's Health Initiative will require 14 years and the investment of $600 million to bring it to completion (70).

Additional research initiatives are needed to acquire basic data to improve women's health. Also needed is a major conceptual change wherein physicians fully integrate concepts of clinical care for women into the overall framework of health care.

Vision of the Future: A New Paradigm in Women's Health

Based on the accumulated evidence, COGME concludes that physicians have not been well prepared to meet the challenges of women's health. Fundamental changes are needed in the way physicians are educated and care is delivered to meet these challenges. These changes must occur at all levels of the

educational spectrum and throughout the traditional medical disciplines. In addition, new partnerships within academia and the community need to be formed. Curricular reform and the establishment of innovative academic programs in women's health are essential to bring about these changes; however, broad institutional support is necessary for their success.

A new paradigm in women's health is needed to improve the health care of women in this country. Accordingly, the following overarching themes should serve as a rationale and a guide to action in curricular reform and in the development of academic and clinical programs in women's health:

- Biopsychosocial factors are fundamental to an integrated approach to women's health. • Expansion of the scientific knowledge base is essential to advancing research, education, and clinical care in women's health.
- Gender issues must be considered in all aspects of health.
- Health concerns unique to individuals and their personal experiences should guide the appropriate provision of health care.
- The relationship between women and their health care providers should be an interactive process defined by mutual respect and collaboration.
- An multidisciplinary approach should be implemented that integrates content from various disciplines.
- Innovative clinical models for the provision of comprehensive care to women, including prevention, community approaches, and education, are needed.
- The ability to respond to the needs of economically, socially, and culturally excluded populations is fundamental to the development of a women's health curriculum, which must recognize the diversity of the population.
- Medical education is as much a socialization process as it is an acquisition of knowledge and skills. Medical students and residents must be exposed to appropriate role models; women's health cannot be taught exclusively by didactic methods.
- Women's health would benefit from having women in leadership and policymaking positions in all aspects of health care. Efforts must be made to recruit and promote the advancement of women into these positions.

This new paradigm is not unique to women's health; applied broadly, these principles could benefit men as well as women. The rationale for focusing on women's health is that women have been the ones most poorly served by the current system.

Competencies in Women's Health

Definition of Competencies

As broadly applied to the practice of medicine, competencies are the qualifications that physicians need to care for patients. The concept of competencies in medicine is poorly defined, however, and thus difficult to measure. Methods traditionally used to measure the competencies of physicians include formal cognitive testing at the time of certification or licensure and peer review of clinical performance. Newer methods being devised to assess physicians' skills and performance include techniques such as chart-stimulated reviews, direct observation of selected required skills in a simulated setting, and use of standardized patients, who demonstrate particular medical issues (71). The ultimate measure of physicians' competency, however, is their patients' experience. There are no techniques currently in use that adequately assess this dimension of practice performance.

Given the limitations, COGME broadly defines competency in women's health as the ability to provide compassionate, comprehensive care to women of all ages through the acquisition and application of the requisite knowledge; clinical skills; attitudes; and ethical, medical, and professional behaviors. In this context, competencies are a measure of a physician's integrative cognitive process and performance and are reflected in his or her clinical judgment and practice. Competencies are not limited to clinical and technical skills, but rather include a physician's ability to communicate and work effectively in relationships with patients, peers, and other members of the health care system in the care of women. This standard should be applied to all physicians in all disciplines.

Delineation of Competencies

Competencies should be based on an understanding of the health status of women and certain fundamental aspects of women's health. It is essential that all physicians understand basic female physiology and reproductive biology. In addition, they need to appreciate the complex interaction among environmental (i.e., housing, employment status), biological, and psychosocial factors. Among the conditions that are not unique to women, physicians need to be aware of those aspects of health and disease that are different in women or have important gender implications. The ability to apply this information requires that physicians adopt attitudes and behaviors that will help create

a conducive relationship between themselves and their patients, who may be different from their own culture, gender, or sexual orientation. Women's relationships with the medical system are also changing, requiring physicians to understand women's patterns of obtaining health care and their methods of communication and interaction, as well as to appreciate gender differences in clinical decision-making. In this context, all physicians should be expected to demonstrate competence in the following areas:

- Knowledge of effects of physiology on women's biological and cognitive function, behavioral changes, and the psychosocial development of women
- Knowledge of the major gender differences in health and disease across women's life spans, including recent innovations in women's health research, particularly in terms of the following areas:
  - — Epidemiologic data
  - — Pharmacokinetics of drugs in women and the impact of hormonal status on drug metabolism
  - — Behavioral and societal factors that influence health outcomes among women from different ethnic, racial, and cultural backgrounds
  - — Community health issues related to disease prevention and health promotion
  - — Socioeconomic factors that influence health
- Attitudes and behaviors that are culturally and gender sensitive, including an appreciation of the following factors:
  - — The impact of social roles and life cycle events on women's health
  - — Women's patterns of obtaining health care
  - — Women's forms of communication and interaction
  - — Gender differences in medical decision-making
- Ability to apply knowledge of biological and psychosocial factors in the provision of comprehensive care to women, which requires the following skills:
  - — The ability to integrate knowledge from the biomedical and behavioral sciences and apply it to issues that are fundamental to women's health across their life span
  - — The ability to view women within the societal context in which they lead their lives
  - — The ability to work collaboratively with women and other members of the health care team

These competencies are intended to be applied broadly across the educational spectrum of all disciplines and to be used as the intellectual framework for further work in this area. Their specificity will vary depending on the educational level of the physician and the discipline to which the competencies are applied. However, special attention should be focused on the disciplines that provide the majority of primary care to women. It is important for the concept of competencies and their content to reflect new information about the health of women as it is accumulated.

Framework for Change

Many of the challenges this report details are beginning to be addressed at the national level. Steps have been taken by several government organizations to identify major health issues in women. These efforts will facilitate the development of a core curriculum in women's health that can be applied broadly across the educational spectrum and serve as a conceptual framework for institutions planning initiatives in this area. As noted in the introduction, during the past year both the U.S. Senate and the House of Representatives initiated inquiries into the adequacy of education and training in women's health in academic medical programs (5, 6).

Ultimately, however, the direction of academic programs in women's health will depend on advances in women's health research. This knowledge will be essential to help define, as well as advance, a women's health agenda. The content and structure of women's health programs will in turn depend on integrating existing and new information into educational curricula and training programs. The field of women's health must remain open to changing knowledge over time.

Development of Programs in Women's Health

Among academic institutions there is beginning to be an awareness of the importance of women's health issues. However, there is tremendous uncertainty about the best way to educate physicians to address women's health concerns. To date, educational efforts have focused primarily on the development of postgraduate educational programs designed to reeducate physicians in practice about basic women's health issues (72). There appears to be little activity at the most crucial stages of the educational spectrum, specifically, at the undergraduate medical school and residency training program levels.

The dearth of initiatives early in the educational

process may be related to uncertainty over what comprises the area of women's health as well as to the failure to acknowledge its importance. The U.S. Public Health Service Office on Women's Health has an action plan for women's health that provides guidelines for identifying the disorders or conditions that should be included within the framework of a women's health curriculum (10). However, the action plan does not address broader clinical and educational issues, such as questions concerning the domain of women's health and how it differs from routine general medical or gynecologic care (73), nor more practical considerations such as which discipline or disciplines should be responsible for curriculum development, clinical care, and training in women's health. Despite such challenges, programs are being developed and offered by professional organizations and academic societies to expand awareness of women's health care needs and abilities of physicians to address them. Within graduate medical education, specialties are offering additional clinical experience through multidisciplinary women's health centers, and at the fellowship level scattered programs in women's health exist as separate educational tracks (74).

Superimposed on these educational and training initiatives is the highly visible national debate over the issue of a separate women's health specialty (75, 76). Some advocate establishing a separate specialty in women's health that will train physicians to focus exclusively on the physical and emotional concerns of women. Proponents of a separate specialty argue that the only way to change the male bias in medicine, provide comprehensive training and clinical care for women, and advance the research agenda in women's health is through the power base of a separate specialty (75). Those who oppose the position of a separate women's health specialty wish to avoid the further fragmentation and increasing specialization of medical care by expanding existing programs in pediatrics, internal medicine, obstetrics–gynecology, and family practice to incorporate the relevant knowledge and skills. They are concerned that a separate specialty would further marginalize women's health issues and the professionals working in this area, many of whom would be women. They propose instead that this content should be integrated throughout the medical curriculum, thus ensuring that physicians in all disciplines are properly trained in women's health (76).

COGME recommends that the primary emphasis be placed on expanding knowledge and skills in the current disciplines rather than creating a new specialty. However, faculty and research capabilities should not be neglected in this approach. To accomplish the changes needed to improve health care for women, the concept of women's health must have a valid place in the medical community.

Findings and Recommendations

Physicians should have an increased understanding of the differences and unique qualities of women's health. Aspects of mortality and morbidity, important and common health concerns, women's patterns of seeking care, and the need for continued research should all be taken into account in developing courses for action.

Findings

1. Women have important health needs throughout their life span.

2. Demographic shifts will affect health trends in the United States in general and the health status of women specifically.

3. Many women receive incomplete and poorly coordinated care for their routine and comprehensive health concerns. Barriers include inadequate health insurance, fragmented delivery of primary care services, and deficiencies in physician training.

4. Changes in undergraduate and graduate medical education, in addition to continuing medical education, are needed to address adequately the comprehensive health needs of women.

5. Gender inequalities and bias in research design and implementation, through exclusion or underrepresentation of women in clinical studies, have contributed to gaps in knowledge concerning women's health care and the needs of women and may lead to suboptimal care.

Recommendations

1. Changes in physician education and training should take into account the impact of the changing demographics of the population and recognize the special needs of economically, socially, and culturally excluded populations.

2. Institutions should take actions to ensure that women are full participants in the institutional, community, regional, and national changes that are occurring in health care. Collaborations between existing community and national health care groups and student and faculty organizations may be used to foster this goal.

3. Physicians acting as primary care providers for women should have broad understanding of, competency in, and ongoing education about women's health.

4. Academic health centers should evaluate systematically the knowledge base within each of the basic and clinical science disciplines to determine what is being taught concerning gender issues and how new information is being incorporated. This

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information should be used to help identify deficiencies in the understanding and teaching of women's health issues and to make recommendations for change.

5. Evaluation of student performance related to women's health should include assessment criteria to identify and correct deficiencies in knowledge, clinical management, and behavior toward and communication with women patients.

6. Medical school faculties should develop clinical simulations of the health problems most critical to the comprehensive care of women in all age and racial or ethnic groups. Students should be expected to manage these simulations in accordance with a faculty-derived standard in order to receive a medical or osteopathy degree.

7. The National Board of Medical Examiners should review its three examinations to ensure adequate assessment of competency in the knowledge and skills requisite to providing comprehensive care for women. The subsequent nationwide assessment of knowledge and problem-solving abilities would help medical educators identify the clinical simulations to be included in undergraduate medical education.

8. The education of physicians should prepare them to recognize and respond appropriately to the effects of the changing roles of women with regard to their relationships to the medical system, patterns of acquiring health care, access to care, methods of communication, and compliance with treatment and medical advice.

9. Accreditation bodies—the Liaison Committee on Medical Education, the Accreditation Council for Graduate Medical Education, and the American Osteopathic Association—and other national organizations with major involvement in undergraduate, graduate, and continuing medical education—the Association of American Medical Colleges, the Association of American Colleges of Osteopathic Medicine, the American Medical Association, the National Board of Medical Specialties, the National Board of Medical Examiners, the Federation of State Medical Boards, and the Council of Medical Specialty Societies—should collaborate in furthering the development of educational programs that address issues of women's health at all educational levels.

10. Continuing medical education should provide opportunities for practicing physicians to remedy any deficiencies in their knowledge and practices with respect to women's health issues.

11. Fundamental changes that cross traditional departmental boundaries in medical school and postgraduate curricula are needed. Such changes would be facilitated by collaborative centers or programs in women's health within academic health centers.

12. Medical schools and other teaching institutions should develop innovative approaches to medical education and training in women's health that cross traditional institutional boundaries; that facilitate the development of integrated curricula, interdisciplinary research, and more responsive clinical models; and that support the development of expert faculty committed to advancing women's health at all levels.

13. Congress should provide funding for competitive grants to support and stimulate women's health initiatives within academic institutions. The programs could include interdisciplinary educational offerings, research, health promotion and disease prevention, and patient care. Such grants should acknowledge programs on the basis of their innovation, their potential to be models for new programs, and their cost effectiveness. These initiatives would facilitate the development of more efficient and responsive clinical models, integrated curricula, and interdisciplinary research in women's health.

14. Congress should establish academic awards in women's health. Such grants should provide support to individual faculty members for their professional development and for the implementation of innovative programs in women's health. Congress should provide funding for competitive grants to support and stimulate academic institutions' efforts at improving women's health.

15. Interdisciplinary fellowship programs in women's health should be established to allow physicians to acquire additional skills and training in the comprehensive care of women and gender-relevant research. Although the programs would vary in emphasis and design, depending on the characteristics of participating institutions, each would have a core program that would introduce fellows to basic principles and knowledge essential to an integrated understanding of women's health and to the scientific methods used in women's health research.

16. Current and expanded efforts to promote research in women's health should be supported.

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Part II — Women in the Physician Workforce

Women's participation in the medical profession has increased dramatically in the past 25 years. The number of allopathic women physicians in the United States more than quadrupled between 1970 and 1991, and current trends indicate that the increase will continue. The number of osteopathic women physicians increased 36% between 1989 and 1992. Women comprised only 7.7% of all physicians in 1970, whereas by the year 2010 they are expected to represent 30% of the total physician population (1).

This physician demographic shift has important ramifications for the health care system in the United States. It parallels two other trends in American health care—the demand by consumers and policymakers for increased attention to women's health issues and the health reform effort to increase the number of generalist physicians within the United States. Women in medicine bring a unique perspective to women's health concerns and are more likely than male physicians to choose a primary care specialty. Therefore, these women can substantially influence the shape and direction of changes in the health care system.

Despite the contributions that women can make to the future of medicine, there continues to be evidence that women are not attaining their fair and appropriate place within the medical profession. By most measurements of professional success and accomplishment—income, academic rank, leadership roles, and participation in scientific research—women lag behind men to a degree disproportionate to their smaller number and relatively recent entry in numbers into the medical profession.

Bias against women in the medical profession not only denies women a chance to realize their personal potential, but also denies medicine the contributions that women could make to the field. The link between the status of women physicians and the quality of women's health care, for example, has attracted the attention of policymakers, government agencies, and other organizations. There is also evidence that women generally bring special skills in communication and patient care that could help to set new standards for the profession.

The Congressional Caucus for Women's Issues, a coalition of women members of Congress, included initiatives on gender bias in medicine in its 1993 omnibus package of women's health bills, the Women's Health Equity Act. In addition, both the National Institutes of Health (NIH) Office of Research on Women's Health (ORWH) and the Society for the Advancement of Women's Health Research held forums in 1992 on how to increase the role of women in biomedical fields. Many of their recommendations are cited in this report.

The Historical Context

The acceptance of women into mainstream medical practice is a relatively recent phenomenon in the United States, and medical institutions are still adapting to the dramatic increase in the numbers of women in the professional workforce. The gains represented by the influx of women into medicine and the medical system's response to the needs of women physicians are best evaluated in a historical context.

Ventures by women in the medical field were initially successful during the last quarter of the 19th century when there were 16 women's medical schools and several traditional schools accepted women. However, this "first wave" of women's involvement in medicine was followed by a long period of decline. By 1910, all but three of the women's medical schools had closed or merged with a traditional school (e.g., the Women's Medical College of New York with Cornell University Medical School in 1900). Integration did not necessarily bring greater opportunities for women, however. Whereas 70 women had entered Cornell University Medical School in 1900, by 1903 the number had dropped to only 10. One-half of all medical schools in the United States did not accept women in 1910 (1). As a net result, the ranks of women physicians declined during the first part of the century, resulting in an even smaller proportion of medical students being women in 1930 (4%) than in 1900 (6%).

Women also faced hardships in finding residency training. The American Medical Association (AMA) reported that, in 1921, only 8% of U.S. hospitals with training programs accepted women as interns. In 1925, one-half of all U.S. women physicians trained at only nine hospitals, most owned and operated by women (2).

Although the situation for women seeking entry to medical school had improved somewhat by midcentury, until the mid-1970s, women continued to be admitted to medical schools according to an infor-

mally established but acknowledged quota system. Prior to World War II, only one to three qualified women were accepted into a class (3). After the war, a quota of roughly 6–8% women students was believed to exist; in 1946, the dean of one eastern medical school admitted to limiting female admissions to 6% of each entering class (4). Expectations for women graduates were that they would enter a limited number of fields, primarily general practice, pediatrics, and psychiatry, and that a certain percentage who chose to have families would cease practice either permanently or temporarily.

Only after medical schools began changing their admission practices in the mid-1970s did barricades for women in medicine begin to fall. In many ways, however, vestiges of a discriminatory system linger, and the current system is still adapting to a changing medical workforce.

The Council on Graduate Medical Education (COGME) believes that the involvement of women in clinical and academic positions in medicine will promote better care for all patients and lend needed diversity to the field. The following findings outline the current status of women in medicine and identify areas in which reforms are needed.

Findings of the Council on Graduate Medical Education

Finding 1: The projected eightfold increase between 1970 and 2010 in the number of women entering the medical profession will increasingly affect all aspects of medical education, research, and practice.

- **The number of women physicians is projected to rise to almost 100,000 in 2010 from approximately 25,500 in 1970, when the number of women entering medicine began to increase substantially.**
- **The percentage of women among all physicians will rise to 29% in 2010, up from 8% in 1970.**
- **The percentage of women in the entering medical school class has continued to rise since 1970, reaching 40% in 1993.**
- **The increase in the numbers of women physicians is having an ongoing and increasing impact on medical education, research, and practice.**

Demographic Characteristics

An overview of demographic trends and characteristics of women in medicine will help to clarify the position of women physicians and the impact they are having on the field. At the same time, it will also illustrate the difficulties they are encountering in achieving full status in the profession.

Numbers

The number of allopathic women physicians in the United States has grown nearly fivefold since 1970. If current trends in the applicants and entrants to medical school continue, women physicians will represent approximately 30% of the total allopathic physician population in the United States by the year 2010 (Table 12). In recent years, the number of osteopathic women physicians has been increasing at a faster rate than that of allopathic women physicians because of the greater growth rate of osteopathic medicine, although the ratio of female to male osteopathic physicians (83% male to 17% female) still lags behind that of allopathic medicine (81% male to 19% female) (Table 13).

Beginning in the mid-1970s and continuing through the 1980s, the number and percentage of women medical school applicants, entrants, and graduates underwent a dramatic and unprecedented increase. Women represented fewer than 10% of first-year entrants in 1960, increasing to nearly 30% of first-year entrants in 1980, and to 42% of medical school entrants in 1993. The continued increase is shown by comparing the graduating class from allopathic medical schools in 1993, which was 38% female, with the entering class in the fall of the same year, which was 42% female (Table 14) (5). There is also substantial consistency across the nation in the enrollment of women in allopathic medical schools, which varies by school

Table 12. Allopathic Physicians by Gender

	1970 (%)	*1980 (%)*	*1989 (%)*	*1992 (%)*	*2010 (%)*[2]
Total	330,824[3] (100)	467,679 (100)	615,421 (100)	670,336 (100)	676,700(100)
Male	305,317 (92.3)	413,395 (88.4)	511,227 (83.1)	544,437 (81.2)	477,800 (70.6)
Female	25,507 (7.7)	54,284 (11.6)	104,194 (16.9)	125,899 (18.8)	198,000 (29.4)

[1] All data are as of December 31 of each year; 1992 figures are termed '1993' by the AMA.
[2] Projections are of active physicians only.
[3] Excludes 3,204 with address unknown.

Source: American Medical Association. Physician Characteristics and Distribution in the U.S. Chicago, AMA, 1994

Table 13. Osteopathic Physicians by Gender

	1989	1990	1991	1992	1994
Total	***28,040***	***29,454***	***30,780***	***32,064***	***34,811***
Male	24,414	25,361	26,271	27,127	28,861
%	86.5	85.6	84.8	84.1	82.5
Female	3,626	4,093	4,509	4,937	5,950
%	12.8	13.8	14.6	15.3	17.0

Source: American Osteopathic Association Biographical Records

from approximately 35–50% of the total. This increase in women medical students and graduates has continued into residency training programs; in some specialties, such as pediatrics, obstetrics–gynecology, and dermatology, women now represent more than one-half of all physicians in training (Table 15) (2). In osteopathic medical schools, the number of women entrants more than doubled between 1980 and 1993, increasing from 329 (22% of the class) in 1980 to 771 (36%) in 1993 (Table 16).

Age

Because many women entered the profession within the past two decades, women physicians are a relatively young group and, on average, are younger than their male colleagues. In 1992, 31% of physicians less than 35 years of age were women, compared with 10% in 1970 (Table 17) (6). In the 35-to-44 age bracket, women comprised 24% of the physician population, compared with only 7% in 1970. As yet, the increases have just barely begun to reach the age group of 55 and older.

Women are also disproportionately overrepresented in the younger age groups of osteopathic physicians. In 1993, women represented 29% of doctors of osteopathy under age 35 and 19% in the 35–44 age bracket, compared with 6% of those age 65 and older (Table 18).

The increased female enrollment in medical schools during the 1970s and 1980s is also being felt in mainstream medical practice. The number of women in office-based practice alone has increased sixfold since 1970 (1).

Racial and Ethnic Diversity

Although the percentage of women in medical school increased by nearly 25% from 1990 to 1993, women from ethnic and racial minority groups are still

Table 14. Female Medical School First-Year and Total Enrollment and Graduates, Selected Years

	First-Year Enrollment*			Total Enrollment			Graduates		
Academic Year	Total	Women	Women as % of Total	Total	Women	Women as % of Total	Total	Women	Women as % of Total
1960-61	8,298	786	9.5	30,288	1,756	5.8	6,994	354	5.0
1970-71	11,348	1,256	11.1	40,487	3,894	9.6	8,974	827	9.2
1980-81	17,186	4,966	28.9	65,189	17,248	26.5	15,632	3,898	24.9
1990-91	16,876	6,550	38.8	65,163	24,286	37.3	15,427	5,553	36.0
1991-92	17,071	6,804	39.9	65,602	24,962	38.1	15,365	5,550	36.1
1992-93	17,079	7,158	41.9	66,142	26,038	39.4	15,466	5,880	38.0
1993-94	17,121	7,230	42.2	66,629	26,854	40.3	15,555	5,919	38.1

*Includes new entrants and first-year repeaters.

Source: Association of American Medical Colleges

Table 15. Women in Residency Training by Specialty: 1993*

Specialty	Number	% of Total
All residents	31,198	32.0
Internal medicine	6,454	31.3
Pediatrics	4,444	59.6
Family practice	3,131	39.3
Obstetrics gynecology	2,689	53.0
Psychiatry	2,177	43.2
Anesthesiology	1,303	22.9
General surgery	1,409	17.1
Radiology, diagnostic	1,136	26.8
Pathology	1,071	39.2
Dermatology	472	51.8

*More than 2 of 5 women residents were in training in internal medicine, pediatrics, or family practice. Fewer than 1 in 5 were in obstetrics-gynecology or psychiatry.

Source: JAMA 1994;272:[page nos. 725-6]

Table 16. Osteopathic Female First-Year and Total Enrollment and Graduates

Academic Year	First-Year Enrollment*			Total Enrollment			Graduates		
	Total	Women	Women as % of Total	Total	Women	Women as % of Total	Total	Women	Women as % of Total
1970-71	623	17	2.7	2,151	61	2.8	472	11	2.3
1980-81	1,496	329	22.0	4,940	971	19.7	1,151	202	17.6
1990-91	1,950	667	34.2	6,792	2,221	32.7	1,534	458	29.9
1991-92	1,974	645	32.7	7,012	2,340	33.4	1,532	501	32.7
1992-93	2,035	715	35.1	7,375	2,512	34.1	1,606	533	33.2
1993-94	2,162	771	35.7	7,822	2,714	34.7	1,775*	617*	34.8*

*Estimated

Source: AACOM 1994 Annual Statistical Report

Table 17. Federal and Nonfederal Physicians by Age and Gender[1]

Year and Gender	Total MDs	Under 35	35-44	45-54	55-64	65 and over
1970						
Total MDs	330,824[2]	88,413	83,444	70,678	50,143	38,146
Male	305,317	79,362	77,610	65,777	47,279	35,289
Female (%)	25,507 (7.7)	9,051 (10.2)	4,901 (6.9)	2,864 (5.7)	2,857 (7.5)	
1992						
Total MDs	670,336	134,079	201,989	136,159	89,305	108,804
Male	544,437	92,362	154,266	116,248	81,645	99,916
Female (%)	125,899 (18.8)	41,717 (31.1)	47,723 (23.6)	19,911 (14.6)	7,660 (8.6)	8,888 (8.2)

[1] All numbers are as of December 31 of each year; 1992 figures are termed '1993' by the AMA.

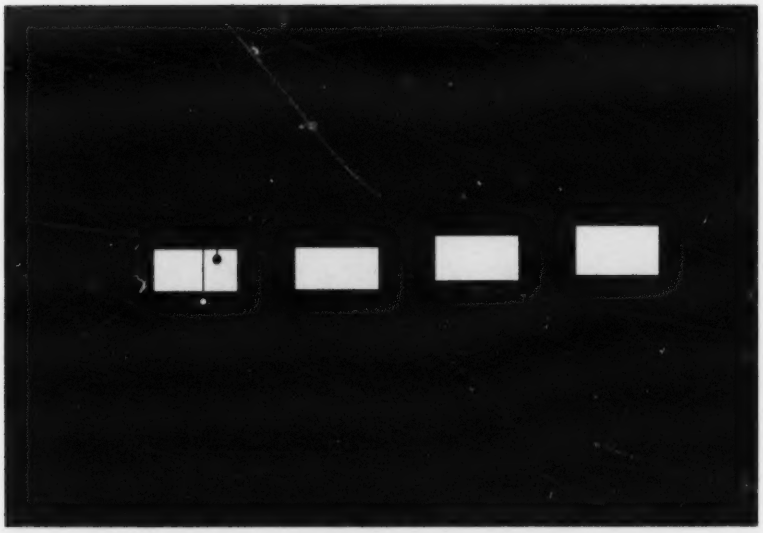
[2] Excludes 3,204 with address unknown.

Source: Adapted from American Medical Association. Physician Characteristics and Distribution in the U.S. Chicago: AMA, 1994.

Table 18. Federal and Nonfederal Active Osteopathic Physicians by Age and Gender (includes Postdoctoral Osteopathic Physicians), 1993

Year and Gender	Total MDs	Under 35	35-44	45-54	55-64	65 and over
1993 Total active DOs	32,166	8,694	12,794	5729	2,836	2,113
Male	26,516	6,174	10,356	5,230	2,762	1,994
Female (%)	5,650 (17.6)	2,520 (29.0)	2,438 (19.1)	499 (8.7)	74 (2.6)	119 (5.6)

Source: American Osteopathic Association Biographical Records



Source: HRSA Bureau of Health Professions, Division of Medicine.

Table 19. U.S. Medical School Graduates, 1992

Racial/Ethnic Group	*Females (no.)*	*Females (%)*
White	3938	34
Underrepresented Minorities		
Black	472	56
American Indian/Alaska Native	33	52
Mexican American/Chicano	105	41
Puerto Rican (Mainland)	50	50
Subtotal	*660*	*52*
Other Minorities		
Asian or Pacific Islander	739	38
Puerto Rican (Commonwealth)	74	35
Other Hispanic	86	32
Unidentified	53	30
Subtotal	*952*	*37*
Total	***5,550***	***36***

Source: Association of American Medical Colleges.

underrepresented in the medical student population (7). Less than 15% of the women enrolled in medical school in 1993–94 were from ethnic or racial minority groups. The largest underrepresented group was African-American women, who comprised 11% of total enrollment of women. Hispanics and Native Americans represented 4% of the female medical student population (Fig. 11) (6).

The gap between male and female enrollment is narrower among students of color than among the total student population. Minority group women comprised over one-half of the minority graduates in 1992 (Table 19). Among the African-American student population, more women than men graduated from U.S. medical schools that year, although their number (472 women, or less than 10% of all female graduates) was small (8).

The Potential Impact of Women in Medicine

The current women's health movement emerged as a byproduct of the feminist movement of the 1960s and 1970s, and, in its early years, was driven by the desire of women consumers to have more information and autonomy in their health care decision-making (9). Today, the movement is strongly influenced by the rising numbers of women physicians, who are uniquely positioned to focus more attention on women's specific health needs and to highlight issues of gender bias in medical education and scientific research.

Research

Women physicians have given impetus to the demand for increased research concerning women's health issues, noting that women have not been adequately represented in many NIH-funded research studies. Women researchers have been found to be more likely to address questions related to women's health and to use research methods that include a representative sampling with regard to gender (10).Women constituted one-half of the principal investigators applying for 20 NIH supplemental grants on women's health issues and 36% of the grant recipients (11).

The connection between the presence (or absence) of women in leadership roles and the status of women's health research has not been lost on government agencies or legislators. In recent years there has been an unprecedented focus by Federal policymakers on the status of women in medicine. In its 1993 omnibus package of women's health measures, the Women's Health Equity Act, the Congressional Caucus on Women's Issues included a provision instructing the Director of NIH to establish policies on the employment of women scientists and to monitor compliance with these policies.

The NIH's ORWH, after conducting public hearings in 1992 on the recruitment and retention of women in biomedical careers, concluded "We are convinced that the best means of assuring that research related to women's health remains a visible and active priority as we enter the 21st century is to increase the number of women in policy-making positions in research institutions—including universities, the federal government, and the private sector" (11).

Clinical Care

Provision of Preventive Services. Women patients, as a group, have become increasingly vocal in recent years about their dissatisfaction with the medical establishment's attitudes toward, and lack of interest in,

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women's unique health needs, including preventive health needs. In terms of providing preventive services to women, there is increasing evidence that the gender and age of the physician influence the provision of care to women. In the disciplines of family practice, internal medicine, and obstetrics–gynecology, female physicians are more likely than their male counterparts to provide preventive health services to women (12, 13, 14). In one study, younger physicians were less likely than their older colleagues to perform selected cancer screening tests in women (12). This finding is of particular concern given the increased emphasis in medical school and residency curricula on disease prevention.

Patient Communication and Satisfaction. Several studies have examined the effects of gender differences in communication on medical care. Lurie et al. noted that women physicians, as a group, spend more time with patients, converse more with patients, and appear to listen more closely (14). Patients of women physicians report greater comfort, particularly in revealing difficult histories and those involving personal violence such as family or sexual abuse (15). Women patients also appear to feel less apprehension and hesitation in discussing reproductive and sexual issues with women physicians.

These findings suggest that women physicians can be effective through better communication with patients and can serve as models for their male colleagues. The findings are supported by a 1991 survey of 1,300 physicians in which 85% of the women and nearly 50% of the men indicated that they felt women physicians have a different practice style. In addition, almost 90% of the female and 25% of the male respondents reported that they felt women's practice style would improve patient care (16). The implications of these differences are broad and suggest new directions for medical student training, resident education and supervision, and clinical practice.

Finding 2: Women physicians remain underrepresented among leaders in medicine.

- **Although increasing numbers of women have entered medical school and residency training, are obtaining faculty and research positions, and are practicing medicine, women have not automatically achieved equal status in the medical profession.**

- **Based on comparisons of income, academic rank, leadership positions, and scientific research opportunities, women physicians have not shared equally with men in professional success.**

- **Although the percentage of women among all faculty (23%) exceeds their representation in the overall physician workforce, they represent only 14% of the principal investigators of NIH-sponsored research, 10% of all full professors, 4% of department chairs, and 3% of medical school deans.**

- **Women physician leaders constitute a small but growing segment of the medical profession, particularly at the county and state level.**

Economic Disparities

Income is the most visible measure of the economic status of women in medicine. Because women physicians are generally younger than men, overrepresented in the lower-paying primary care specialties, and less likely to be self-employed, their incomes will reflect those differences. However, even when these variables are taken into consideration, women lag behind men in earnings (Table 20) (1). The hourly rate and the per-visit rate is lower for women than for men, regardless of the years of practice (Table 21).

In 1991, women physicians in private practice earned median incomes that were 34% lower than those of their full-time male colleagues (i.e., the median income for women physicians was $97,350 versus $146,980 for men). In 1988, the ratio of average female-to-male incomes ranged from .63 in pathology to .80 in anesthesiology. Women earn less than men even in those specialties where women are well represented. A 1991 survey of 17,000 physicians in group practices revealed that women's incomes were 27% lower than men's in family practice, 29% lower in internal medicine, and 34% lower in pediatrics (17). Although the earnings difference within specialties was only 27–30%, compared with the profession-wide difference of 37%, the disparity is still substantial (1).

In academia, too, the income level of women is lower than that of men. Although women are less likely than men to attain the highest academic levels, when men and women physicians are at the same academic rank the gender gap in salary persists and has, in fact, widened in the past 20 years. In 1975, male full professors earned 9.2% more than female full professors and male instructors earned 4.5% more than female instructors. In 1991, male full professors earned 11.5% more than females and male instructors earned 6.7% more than females (18).

Income disparity may have a particularly harsh impact on women. Women medical students receive less family financial support, are more likely to depend on student loans to complete medical school, and enter medical practice with greater financial burdens than do male physicians. According to a 1988 study by the Association of American Medical Col-

Table 20. 1988 Mean Net Yearly Income*

	Under Age 40		Age 40-49		Age 50 and Above	
Specialty	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*
General family practice	93,615	69,258	107,790	80,556	93,496	75,382
Internal medicine	126,855	96,685	157,739	83,264	122,964	130,754
Pediatrics	90,612	63,872	110,943	87,693	111,541	51,172
Obstetrics-gynecology	170,829	163,369	217,409	124,903	166,736	92,264
Psychiatry	117,348	58,603	131,836	81,636	110,425	78,248

*After expenses but before taxes.

Source: American Medical Association. Women in Medicine in America: In the Mainstream. Chicago, AMA, 1991.

Table 21. Unadjusted Net Income* of Physicians by Gender and Years of Practice, 1991**

Years of Practice	*Average Totals*		*Income By Hour*		*Income Per Visit*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*
1-4	153,600	92,800	54.10	36.90	30.20	20.0 0
5-9	193,000	126,000	64.70	52.40	34.00	30.1 0
10-19	195,200	114,100	68.70	42.50	33.00	21.1 0
20+	167,900	110,600	62.80	44.40	29.00	25.6 0

* Not weighted for specialty.

**Gender difference is less (but present) in the "per visit" versus "per hour" category because women physicians schedule fewer patients per hour than men. Women spent fewer hours per week than men in professional (clinical and administration) activities in 1990, 6 fewer hours per week and in 1991 3.3 fewer hours per week.

Source: AMA Center for Health Policy Research. Socioeconomic Monitoring System Care Survey, for 1992.

Table 22. Distribution of U.S. Medical School Faculty by Gender and Rank, 1993

Rank	*Men (%)*		*Women (%)*	
Professer	17,649	(31.4)	1,607	(9.5)
Associate professor	14,329	(25.5)	3,363	(19.9)
Assistant professor	19,810	(35.2)	8,699	(51.3)
Instructor	4,429	(7.9)	3,275	(19.3)
Total*	***56,217***	***(100.0)***	***16,944***	***(100.0)***

* Excludes 1,983 faculty of unknown sex or rank

Source: Association of American Medical Colleges

leges (AAMC), women entered medical school with a greater debt than that of male students (an average of $14,462 versus $10,699) and accumulated more debt by graduation ($37,400 versus $34,700). Minority women may be particularly disadvantaged; African-American graduates had an average debt of over $44,000 (1, 19, 20).

Underrepresentation in Medical Leadership

Women can only be expected to make their fullest mark on the medical profession when they are represented within the leadership ranks of education, research, and organized medicine in sufficient numbers to help direct the course of medical training, research, and health care policy. Yet, by all indicators, women are not entering leadership positions at nearly the same rate as men, though their numbers are rising within the profession.

Women Physicians in Academia

Although women now make up more than 40% of those entering medical school, they are still sparsely represented in the leadership ranks of medicine. The distribution of U.S. medical school faculty in 1993 by gender and rank is shown in Table 22. The table illustrates the fact that women are underrepresented at the most senior academic levels and disproportionately overrepresented at entry and junior levels. Although 23% of full-time faculty were women, only 9.5% of these women were full professors compared with 31% of male faculty. The largest number and percentage of women in 1993 were assistant professors. Although part of the disparity in rank between men and women can be accounted for by differences in average age or years of experience, not all can be explained by those confounding variables.

There was a considerable increase in the overall number of female faculty members in both basic and

Table 23. Women Faculty by Department, 1975 and 1994

	1975	1994	
Basic Sciences	Women Faculty (%)	Women Faculty (%)	Women Full Professors (%)
Anatomy	244 (15.5)	405 (23.5)	96 (23.7)
Biochemistry	157 (10.4)	438 (20.2	99 (22.6)
Microbiology	189 (15.7)	390 (23.0	95 (24.4)
Pathology	468 (17.7)	1,156 (25.6	173 (15.0)
Pathology	110 (10.3)	292 (18.4)	74 (25.3)
Physiology	162 (11.5)	306 (16.8)	80 (26.1)
Other basic sciences	--	337 (23.2)	64 (19.0)

Source: Association of American Medical Colleges. Women in U.S. Academic Medicine Statistics. Washington, DC. AAMC. 1994.

Table 24. Clinical Sciences Women Faculty By Department, 1975 and 1994

	1975		1994			
Clinical Sciences	Women Faculty	%	Women Faculty	%	Full Professors	%
Anesthesiology	233	19.1	956	24.8	42	4.4
Dermatology	28	10.4	152	29.1	14	9.2
Emergency medicine	N/A	--	108	21.2	4	3.7
Family practice	89	14.8	631	30.5	34	5.4
Internal medicine	630	8.7	3,767	21.3	268	7.1
Neurology	118	12.3	483	20.9	41	8.5
Obstetrics gynecology	183	13.4	1,059	33.1	58	5.5
Ophthalmology	60	9.2	293	20.4	23	7.8
Orthopaedic surgery	12	3.6	119	10.7	5	4.2
Otolaryngology	51	12.7	157	19.7	19	12.1
Pediatrics	917	27.7	3,050	37.8	300	9.8
Physical medicine	164	29.2	278	37.7	16	5.8
Psychiatry	852	19.1	2,001	30.6	141	7.0
Public health	288	24.5	409	35.0	45	11.0
Radiology	252	10.9	1,010	20.4	94	9.3
Surgery	141	3.9	666	10.1	54	8.1
Other clinical dept.	N/A	N/A	29	27.6	4	13.8
Allied health dept.	N/A	N/A	236	44.4	17	7.2
Other departments	N/A	N/A	324	34.5	17	5.2
Totals	***6,119***	***14.5***	***19,052***	***24.4***	***1,877***	

Source: Association of American Medical Colleges. Women in U.S. Academic Medicine Statistics Washington, DC. AAMC. 1994

clinical sciences from 1975 to 1994 (Tables 23 and 24). In fact, the percentage of female medical school graduates who joined the faculty of a U.S. medical school exceeded that of men. Of physicians graduating from medical school in 1961, 10% of the men and 14% of the women were full-time faculty members in 1987 (19). Despite their increasing numbers, however, women faculty have been slow rising through the ranks to achieve parity with men in terms of academic status. Women are far less likely to be tenured professors or, more significantly, be considered on the tenure track, than men (Table 25) (21).

Even when women advance to a full professorship position, they may take longer to reach that level. It can take women 20 years to become a full professor, versus 12 years for men (22). Men are advancing twice as fast

Table 25: Tenure Status of Full-Time Faculty by Rank and Gender, 1994

	Tenured		*On Tenure Track*		*Nontenure Track*		*No Tenure Offered by School*	
Rank	*Men (%)*	*Women (%)*	*Men (%)*	*Women (%)*	*Men (%)*	*Women (%)*	*Men (%)*	*Women (%)*
Basic science Faculty								
Professor	4,107 (89.0)	506 (11.0)	118 (82.5)	25 (17.5)	300 (83.3	60 (16.7)	131 (89.7)	15 (10.3)
Associate Professor	1,754 (78.9)	468 (21.1)	415 (75.6)	134 (24.4)	453 (71.8)	178 (28.2)	88 (81.5)	(18.5)
Assistant Professor	84 (76.4)	26 (23.6)	1,101(69.0)	494 (31.0)	993 (66.6)	499 (33.4)	62 (68.1)	29 (31.9)
Instructor	(50.0)	(50.0)	(44.8)	32 (55.2)	255 (58.2)	183 (41.8)	6 (66.7)	3 (33.3)
Total	***5,946 (85.6)***	***1,001 (14.4)***	***1,660 (70.8)***	***685 (29.2)***	***2,001 (68.5)***	***920 (31.5)***	***287 (81.1)***	***67 (18.9)***
Clinical Faculty								
Professor	9,331 (92.3)	778 (7.7)	586 (88.5)	76 (11.5)	2,682 (90.1)	295 (9.9)	475 (96.7)	16 (3.3)
Associate professor	3,941 (83.5)	776 (16.5)	1,633 (79.8)	464 (20.2)	4,828 (78.4)	1,328 (21.6)	428 (82.3)	92 (17.7)
Assistant professor	276 (71.0)	113 (29.0)	5,929 (71.6)	2,346 (28.4)	8,337 (66.5)	4,201 (33.5)	681 (76.6)	208 (23.4)
Instructor	2 (33.3)	4 (66.7)	550 (5.4)	443 (44.6)	2,512 (55.1)	2,050 (44.9)	162 (72.0)	63 (28.0
Total*	***13,550(89.0)***	***1,671 (11.0)***	***8,898 (73.0)***	***3,32 (27.0)***	***18,359(70.0)***	***7,874 (30.0)***	***1,746 (82.0)***	***379 (18.0)***

* Does not add perfectly because does not include 'other' or 'missing' data.

Source: Association of American Medical Colleges. Women in U.S. Academic Medicine Statistics. Washington, DC: AAMC, 1994.

Table 26. Women Chairs of U.S. Medical School Academic Departments*, 1994-1995**

Basic Sciences	***51***	***Clinical Sciences***	***6***
Anatomy	4	Anesthesiology	5
Biochemistry	9	Dermatology	1
Microbiology	11	Emergency Medicine	4
Neurosciences	1	Family & community medicine	12
Pathology	6	Neurology	1
Pharmacology	4	Obstetrics-gynecology	8
Physiology & biophysics	4	Pediatrics	10
Other	12	Psychiatry	3
		Radiology	5
		Rehabilitation/physical medicine	7
		Geriatrics	1
		Medicine	2
		Ophthalmology	1

* In departments identified as interdisciplinary, six chairs are women.
** Approximations based on a count of likely first-names.

Source: Association of American Medical Colleges. Directory of American Medical Education 1994-95

as women. In a cohort of full-time faculty first appointed in 1976, 22% of the men but only 10% of the women had risen to the rank of full professor by 1991 (23).

Although the number of women who chair academic departments has increased by a small number over the past 20 years, the increase is not in proportion to the number of qualified women applicants. By 1994, only 4% of medical department chairs were women (1). There are approximately 100 preclinical and clinical permanent female department chairs, none of whom is in surgery or internal medicine. The largest number of women department chairs is in family and community medicine (Table 26).

As a group, ethnic and racial minority women are somewhat better represented among medical school faculty members (16.1%) than among the student population (Fig. 11). In July 1993, of 2,843 women faculty

Table 27. Women in Administrative Positions in Allopathic Medical Schools*

	1975		1986		1991	
	Total	Women (%)	Total	Women	Total	Women
Deans	119	0 (0)	127	2 (1.6)	126	4**(4)
Senior associate or university-level deans	NA		NA		NA	10
Associate deans	382	13 (3.4)	664	64 (9.6)	772	114 (14.7)
Assistant deans	249	29 (11.7)	370	75 (20.3)	405	102 (25.1)

* Approximations based on account of likely first names.

** As of July 1993 (includes two interim deans; a fifth woman begins a deanship in October).

Source: Association of American Medical Colleges. Directory of American Medical Education, 1991-92. Washington, DC, AAMC, 1991.

members, Asian Americans comprised the largest minority group (9.1%), followed by African-American women (3.7%) (5).However, few have achieved the rank of associate professor or higher. Available data indicate these figures have remained virtually unchanged for the past decade; as junior faculty, minority women face the same barriers as other women in addition to barriers specific to minority groups (24). As noted at a hearing conducted by the NIH's ORWH (25), "for many minority women, to be in a position where a glass ceiling comes into effect would be a significant improvement."

Even though the numbers reflect an increase in the percentage of women in medical school administration, in 1991 only 4 of 126 deanship positions in the United States were filled by women (19). In 1993 there were two women deans at allopathic schools, one dean of an osteopathic school, and one woman chancellor. A small proportion of senior associate deans and only a slightly higher number of associate deans are women; the latter are primarily involved in student affairs rather than in areas such as administration, faculty, and clinical and hospital affairs (Table 27) (2).

Research Opportunities

Although women are represented as researchers in the NIH special initiative on women's health, the same is not true in general research. In 1989, women comprised only 14% of principal investigators of NIH-sponsored research. It has been reported that male faculty members are more likely to receive laboratory space and grant support, to serve as principal investigators on peer-reviewed grants, and to receive research training during medical school (54.9% versus 39.7%) (26). Leaders of the Society for the Advancement of Women's Health Research have noted that "if the stagnation of women in biomedical careers is not addressed... professional institutions will be drawing from a shallow leadership pool in the future" (10).

Leadership Roles in the Profession

Women are significantly underrepresented in leadership positions in both organized medicine and medical academia (27). As in other professions, the ascent to leadership positions requires more than establishing that one is competent, proficient, or even accomplished in a particular field. Because the opinions of leaders are valued, they are consulted and, therefore, can influence change. Individuals are recognized for their leadership abilities at local and national levels by being prominent, by accomplishing special tasks, and by being active participants in professional groups and organizations.

Traditionally, women physicians have joined medical organizations in lower numbers than have male physicians. Their reasons have included financial barriers and perceived lack of relevance or time for meaningful participation. The results of one study suggest that during the years that many men physicians begin their involvement in organized medicine, many women are shouldering family responsibilities that preclude participation. For whatever combination of reasons, there have been relatively few women in top positions of medical societies (28). As a result, women have been slow in achieving leadership status of national professional prominence. Most medical organizations have never had a female president, and women are a small minority within the powerful committees of many specialty societies (29, 30). In 1994, women physicians edited only three national medical journals and served as elected officials of only 8 of 55 national medical specialty societies.

In an effort to increase the participation of women, many medical societies are focusing new attention on the status of women within their ranks (10). Among the clinical specialty groups, there are currently 19 subgroups that focus on women's issues. In the arena of organized medicine, the number of women in the AMA House of Delegates has doubled in the past five years from 5% in 1989 to 10% in 1994. Furthermore, a 1990 survey of state, county, and national medical

specialty societies found that one-third had had a woman president (31). Women physicians are showing more interest in participating as managers and as executives, as evidenced by increasing participation in such specialty societies as the American College of Physician Executives, where women comprised 6% of the membership in 1994, an increase from 3% in 1992.

Women are slowly moving into leadership positions throughout the medical profession, though at a slower rate than men. While some of the lag in achievement may be attributable on average to women's younger age and correspondingly fewer years of experience in the medical profession, barriers to achievement must also be acknowledged and addressed (see Finding 5). Data drawn from a joint analysis prepared by AAMC and AMA conclude that the impressive numbers of female medical students often cited as evidence of parity with men in the profession is illusory. Once training is completed, women do not reach the higher rankings and positions that their male colleagues achieve. This supports a conclusion raised in an earlier study that the problem is not as much recruitment of women into academic medicine but one of advancement within it (19). It appears that vestiges of overt and covert bias remain.

Finding 3: Women physicians tend to select a relatively limited number of medical specialties as their areas of practice. The reasons for this clustering have not been fully delineated.

- **About 60% of all women practice in five specialties: family practice, internal medicine, obstetrics–gynecology, pediatrics, and psychiatry.**
- **Barriers may remain for women who wish to enter other specialties.**
- **Women physicians are more likely than male physicians to be salaried employees, but the percentage of women in office-based practice (52%) is approaching that of men (60%).**

Specialty Selection

In a phenomenon that has come to be known as "clustering," about 60% of all women physicians are in five specialties that contain only about 40% of male physicians: pediatrics, psychiatry, family practice, internal medicine, and obstetrics–gynecology (6). The trend for women physicians to cluster in primary care

Table 28: Surgical Residents by Gender and Percent Female From Selected Years, 1982-90

	1982-1983			*1985-1986*			*1989-1990*		
Specialty	*Male*	*Female*	*%*	*Male*	*Female*	*%*	*Male*	*Female*	*%*
General Surgery	7,821	834	9.6	7,406	987	11.8	6,736	1,064	13.6
Colon/rectal surgery	49	1	2.0	46	7	13.2	46	4	8.0
Neurological surgery	551	32	5.3	621	41	6.1	665	53	7.4
Orthopaedic surgery	2,463	88	3.4	2,595	111	4.1	2,579	142	5.2
Otolaryngology	926	99	9.7	939	121	11.4	970	145	13.0
Pediatric surgery	22	8	26.7	24	6	20.0	29	6	21.6
Plastic surgery	386	38	9.0	355	54	13.2	371	62	14.3
Thoracic surgery	278	13	4.4	270	15	5.3	286	10	3.4
Urology	948	27	2.8	910	39	4.1	930	57	5.8
Vascular surgery	*	*	*	53	0	0	90	2	2.2
Obstetrics-gynecology	3,224[1]	1,694[1]	34.4[1]	2,7091	1,942	41.7[1]	2,477	2,165	(6.6)
Subtotal	16,668	2,834	(14.5)	15,928	3,322	(17.2)	15,179	3,709	(19.6)
Ophthalmology	***	***	***	***	***	***	1,192	370	(23.7)
Total							16,371	4,079	(19.9)

* Vascular surgery programs not accredited until 1984-85.

[1] Counts from the Council on Resident Education in obstetrics and gynecology's resident data bank, Washington, DC, 1989.

*** Comparable data for ophthalmology not available until 1987-88.

Source: Adapted from Kasnell LH. Longitudinal Study of Surgical Residents, 1989-1990. Chicago, American College of Surgeons, 1991.

Table 29: Allopathic Women Physicians by Selected Specialties*

	1970		1980		1992	
	Female (%)	Total (%)	Female (%)	Total (%)	Female (%)	Total (%)
Total	25,401 (100)	334,028 (100)	54,284 (100)	467,679 (100)	125,899 (100)	670,336 (100
Pediatrics	3,816 (15.0)	18,332 (5.5)	8,189 (15.1)	28,803 (6.2)	19,249 (15.3)	46,059 (6.9)
Internal medicine	2,383 (9.4)	41,872 (12.5)	8,130 (15.0)	71,531 (15.3)	24,280 (19.3)	110,583 (16.5)
General and family	2,486 (9.8)	57,948 (17.3)	4,677 (8.6)	60,049 (12.9)	12,762 (10.1)	71,685 (10.7)
Psychiatry	2,459 (9.7)	21,146 (6.3)	4,361 (8.0)	27,481 (5.9)	9,466 (7.5)	36,988 (5.5)
Anesthesiology	1,516 (6.0)	10,860 (3.3)	2,388 (4.4)	958 (3.4)	5,585 (4.4)	29,827 (4.4)
Obstetrics-genecology	1,337 (5.3)	18,876 (5.7)	3,24 (6.0)	26,305 (5.6)	9,240 (7.3)	35,619 (5.3)
Pathology	1,273 (5.0)	10,283 (3.1)	2,215 (4.1)	13,402 (2.9)	4,334 (3.4)	17,149 (2.6)

* All data are as of December 31 of each year; 1992 figures are termed '1993' by the AMA.
The total for 1970 includes 358 not classified physicians and includes 3,204 with address unknown.

Source: American Medical Association. Physician Characteristics and Distribution in the U.S. Chicago, AMA, 1994.

Table 30. Osteopathic Women Physicians by Selected Specialties,1993*

	Female (%)	Total
Total	5,650 (100)	32,166 (100)
Pediatrics	297 (5.3)	744 (2.3)
Internal medicine	455 (8.1)	2,320 (7.2)
General and family practice	2,882 (51.0)	15,541 (48.3)
Psychiatry	188 (3.3)	788 (2.4)
Aesthesiology	172 (3.0)	1,289 (4.0)
Obstetrics and gynecology	178 (3.2)	625 (1.9)
Pathology	38 (0.7)	179 (0.6)

* Osteopathic manipulative medicine and osteopathic manipulative treatment are included in family practice. Internal medicine (IM) includes IM-emergency medicine, IM-Psychiatry, and IM-pediatrics. Pediatrics (ped) includes ped-allergy and immunology, ped-anesthesiology, ped-neurology, ped-psychiatry, ped-surgery, ped-pulmonary medicine, ped-emergency medicine, ped-hematology-oncology and ped-infectious diseases.

Source: American Osteopathic Association Biographical Records

specialties is likely to continue in the near future based on current student residency choices. More than one-third of all women residents in 1993 were in the fields of internal medicine or pediatrics compared with 26% of male residents. Another 26% were in obstetrics–gynecology, family practice, and psychiatry, compared with only 15% of all male residents. Within the primary care specialties, women residents represent a large proportion of each entering residency group, often at least 50%, and sometimes 100% of individual residency programs (2). In 1989–90, women comprised one in five surgical residents (Table 28).

In 1992, as in 1970 and 1980, approximately 15% of female physicians were in pediatrics, compared with approximately 7% of all physicians. Nearly 20% of women practiced internal medicine, and 7% were in obstetrics–gynecology. These are higher proportions than for all physicians and greater than the percentages of women in these fields in 1970 and 1980 (Table 29). Osteopathic women physicians are also overrepresented in pediatrics, internal medicine, general and family practice, and obstetrics–gynecology (Table 30).

Women have been gaining board certification in larger percentages over time. In 1988, 44% of female physicians were board certified compared with only

Table 31: Female Physicians in Certification Category (%)

Certification Status	1970	1980	1988	Change 1970-88
Board certified	23.1	33.9	43.6	20.5
Not board certified	52.0	36.3	29.5	22.4
In training	24.9	29.8	26.9	1.9

Source: American Medical Association. Physician Masterfile. Chicago, AMA, (Year)

Table 32. Allopathic Women Physicians By Professional Activity*

	1970		1980		1992	
	Total (%)	Female (%)	Total (%)	Female (%)	Total	Female
Total physicians	334,028 (100.0)	25,401(100.0)	467,679 (100.0)	54,284 (100.0)	670,336 (100.0)	125,899 (100.0)
Patient care	278,535 (83.4)	18,362 (72.3)	376,512 (80.5)	39,964 (73.6)	550,448 (82.1)	107,844 (85.7)
Office based	192,439 (57.6)	9,217 (36.3)	272,000 (58.2)	20,609 (38.0)	398,854 (59.5)	65,429 (52.0)
Hospital based	86,096 (25.8)	9,145 (36.0)	104,512 (22.3)	19,360 (35.7)	151,594 (22.6)	42,415 (33.7)
Residents	51,228 (15.3)	5,464 (21.5)	62,042 (13.3)	13,322 (24.5)	87,051 (13.0)	27,948 (22.2)
Clinical	0(0.0)	0 (0.0)	0 (0.0)	0 (0.0)	6,579 (1.0)	1,822 (1.4)
Full-time staff	34,868	3,681 (14.5)	42,470 (9.1)	6,038 (11.1)	57,964 (8.6)	12,645 (10.0)
Other professional	32,310 (9.7)	2,956 (11.6)	38,404 (8.2)	4,737 (8.7)	40,569 (6.1)	6,583 (5.2)
Medical	5,588 (1.7)	611 (2.4)	7,942 (1.7)	1,090 (2.0)	7,870 (1.2)	1,616 (1.3)
Administration	12,158 (3.6)	915 (3.6)	12,209 (2.6)	1,178 (2.2)	14,524 (2.2)	1,926 (1.5)
Research	11,929 (3.6)	1,146 (4.5)	15,377 (3.3)	2,077 (3.8)	14,716 (2.2)	2,396 (1.9)
Other	2,635 (0.8)	284 (1.1)	2,876 (0.6)	392	3,459 (0.5)	645 (0.5)
Not classified	0 (0.0)	0 (0.0)	20,629 (4.4)	4,030 (7.4)	14,668 (2.2)	2,770 (2.2)
Inactive	19,621 (5.9)	3,543 (13.9)	25,744 (5.5)	3,773 (7.0)	62,997 (9.4)	8,273 (6.6)
Address unknown	3,204 (1.0)	471 (1.9)	6,390 (1.4)	1,775 (3.3)	1,654 (0.2)	429 (0.3)

* Numbers are as of December 31 of each year; 1992 figures are termed '1993' by the AMA.

Source: American Medical Association. Physician Characteristics and Distribution in the U.S. Chicago, AMA, 1994

23% in 1970 and 34% in 1980 (Table 31).

Multiple factors influence women's specialty choices. Some analysts observe that women's preferences in part reflect the strengths that women bring to the profession. For example, women are more likely than men to enter medical school for altruistic reasons, favoring "helping people in need" over financial gain or status (32). At the same time, women's specialty direction may also reflect the pressures of their family responsibilities, as well as discriminatory barriers limiting their career paths. Women may choose these specialties in part because they involve shorter residencies, more controllable office hours, and other features that are more adaptable to women's needs and responsibilities in starting and caring for a family. On the other hand, they may have few other viable options. When women have both child and home care duties in addition to their professional responsibilities, long and grueling residencies or work days may simply be out of the question (33).

It is likely, however, that subtle stereotyping and overt bias in the academic setting also influence women's specialty choices. Some suggest that in communicating with students, many male "gatekeepers" to the profession, such as teachers, faculty advisors, or residency program officials, steer women toward the more "nurturing" but lower-paying specialties (1, 34).

While clustering of women into primary care specialties may be beneficial in terms of current national priorities that stress increasing the number of generalist physicians, it has other potentially negative implications. Expectations that women will enter primary care may limit women physicians from using and developing their individual talents in a broader range of medical areas and result in a continued preponderance of men physicians in the more technical and currently more financially remunerative and highly regarded specialty fields. Under the current medical value system, the primary care specialties are both less lucrative and less prestigious than many of the medical subspecialties dominated by male physicians. Women physicians stand to lose if these generalists increase in numbers, but not in recognition, creating the possibility of a two-tiered system in which women deliver basic but less-valued health care, while men continue to prosper in procedure-based specialty lties in which women are already critically underrepresented. In this event, women who wish to enter certain male-dominated fields could face even more substantial hurdles.

Site of Practice

Women physicians today are more likely to be in office-based practice and less likely to be in hospital-based practice than they were in 1970. Between 1970 and 1992, the number of women in office-based practice increased sevenfold, from 9,217 to 65,429. Ac-

Table 33. Osteopathic Women Physicians by Professional Activity, 1993

Type of Practice	*Total (%)*	*Female (%)*
Total	32,166 (100)	5,650 (100)
Direct patient care	21,263 (66.1)	2,715 (48.1)
Administration	331 (1.0)	34 (.6)
Full-time medical faculty	492 (1.5)	76 (1.3)
Adjunct medical faculty	2 (.0)	0 (0.)
Director of medical education	18 (.1)	2 (0.0)
Other medical education	46 (.1)	10 (0.2)
Medical research	31 (.1)	6 (0.1)
Other activity	87 (.3)	9 (0.2)
Osteopathic internship	1,283 (4.0)	423 (7.5)
Osteopathic residency	2,156 (6.7)	548 (9.7)
Preceptorship	27 (.1)	7 (.1)
AOA-approved nonosteopathic training	62 (.2)	15 (.3)
Not AOA-approved nonosteopathic training	2,056 (6.4)	574 (10.2)
Unknown	4,312 (13.4)	1,231 (21.8)

Source: American Osteopathic Association Biographical Records

Table 34. Practice Type Category By Gender, 1983 and 1989 (%) *

	1983		*1989*	
	Male	*Female*	*Male*	*Female*
Self-employed	77.7	55.7	72.9	48.7
Solo practice	41.3	32.3	38.4	29.2
Partnership (2 MDs)	9.8	8.4	9.0	7.0
Group practice	26.6	14.9	25.5	12.5
Employee	22.3	44.3	21.5	43.0
Hospital employee	8.5	18.2	6.6	15.5
State/local	1.5	2.6	1.2	3.0
Other employee	12.4	23.6	13.7	24.5
HMO employee	-	-	1.5	3.3
Physician group	-	-	7.2	11.6
Ambulatory care center	-	-	0.5	1.7
University or medical school employee	-	-	1.0	2.4
Other	-	-	3.5	5.5
Independent contractor	-	-	5.7	8.3

* Female physicians are twice as likely to be employees vs. males. Fewer female physicians than male physicians (<1/3 female vs. 1/4 male) are involved in group practices with more than three physicians, which are the most lucrative practices.

Source: American Medical Association. Women in Medicine in America: In the Mainstream. Chicago, AMA, 1991

cording to data from AMA, in 1992 over one-half of all allopathic women physicians, 52%, were in office-based practice; 22% were in residency; and 10% were in hospital-based practice. Only 5% of women were engaged primarily in administrative, research, or teaching activities (1). Although the percentage of women in office-based practice is approaching that of men (52% versus 60% in 1992), women still represent a small minority of all office-based physicians (16.4% in 1992) (Table 32) (1, 6).

Among osteopathic physicians, women are underrepresented in patient care. In 1993, less than one-half of active women osteopathic physicians practiced direct patient care, compared with two-thirds of all active osteopathic physicians (Table 33). Among active osteopathic physicians, a greater percentage of women than active osteopathic physicians overall were in an internship or residency.

Differences also exist between men and women physicians in their practice arrangements (1). Women are more likely than men to be salaried employees; in 1989, 43% of women physicians were salaried versus 22% of men. Nearly three-fourths of male physicians are self-employed (with a solo, partnership, or group practice), but only about one-half of women physicians are self-employed. Women are less likely than men to be solo practitioners (29% versus 38%) or part of a group practice (one in eight women versus one in four men) (Table 34). As a consequence, women are less likely to enjoy the autonomy and income potential that practice ownership can bring. As has been observed, it is unclear to what extent these practice differences, which persisted in the 1980s, are due to differences in preferences as opposed to differences in opportunities and to what extent they will be sustained in today's rapidly changing health care arena (1).

Finding 4: Physician gender has little impact on workforce forecasting

- **On average, women physicians work fewer hours a week and about one less year over their professional lifetimes than do male physicians. Women physicians spend slightly more time with each patient.**
- **The increasing number of women in the workforce has raised concerns that projections based on a predominantly male workforce will be inaccurate.**
- **Calculations based on current knowledge of practice patterns and trends in the gender balance in the workforce suggest that the effects of gender-based adjustments are minimal.**

Table 35. Practice Characteristics by Gender, 1991*

	Office	*Hospital*	*Other*	*Total*
Patient Visits Per Week				
Male	80.0	24.5	15.4	120.9
Female	67.7	17.2	16.3	100.5
Practice Hours				
Male	27.1	8.9	24.7	59.8
Female	25.0	7.5	22.6	54.3

*Excludes residents.

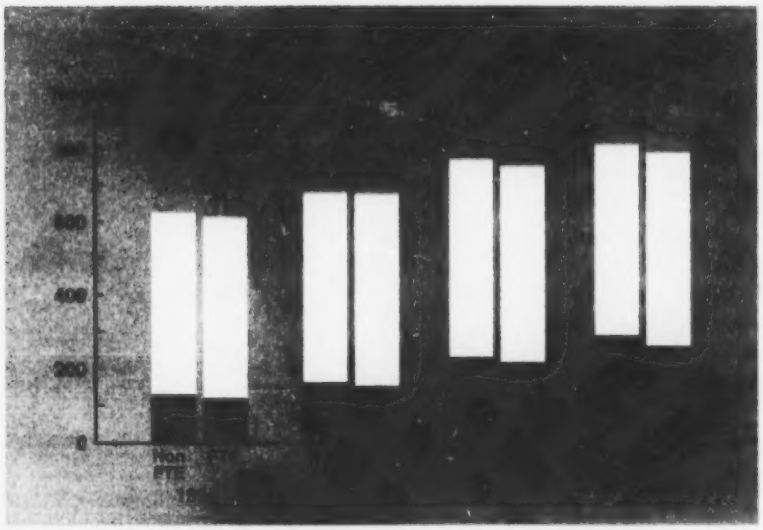
Source: AMA Center for Health Policy Research. Socioeconomic Monitoring System Core Surveys, 1982, 1992

Projecting physician supply and requirements is critical to evaluating the nation's ability to provide health care. One factor that may influence the forecasting of the total supply of full-time equivalent (FTE) active physicians is that of gender. Differing work characteristics between men and women physicians, specifically the number of hours spent practicing medicine, may affect the amount of time a physician is available to care for patients.

Because women physicians as a group traditionally have worked slightly fewer hours a week (Table 35) and slightly fewer years than men, workforce projections based on a predominantly male physician workforce may overestimate physician supply as more women physicians enter the workforce. Various factors suggest the need for a small downward adjustment based on current knowledge of practice patterns and trends in the gender balance in the workforce.

While hours worked is a reasonable measure for identifying resource use, calculations based on patient visits have come under fire because of the inability to adjust for external factors such as patient preparation, use of ancillary staff, technological adjuncts, intensity of services delivered, staffing arrangements, reimbursement schemes, administrative work processes, and thoroughness of the physician. Visits with women physicians are slightly longer than visits with their male counterparts. Although these extended visits may result in a slightly lower productivity rate for women physicians when hours worked and patient visits are used as variables, the effectiveness of such extended communication time may result in fewer return visits and positive health outcomes. Such factors are beyond the scope of current productivity measures.

In the Federal government, the Health Resources and Services Administration's Bureau of Health Professions (BHPr) forecasts assume that women in allopathic medical programs will increase from 38% of graduates in 1993 to 40% by 1995 and 46% by 2000. By the year 2003, women are projected to be nearly 50% of graduates and to remain at that level through 2020. As a result, according to the bureau's physician supply projections,



Source: HRSA, Bureau of Health Professions, Office of Research and Planning.

women are expected to make up about 21% of the 1995 physician supply and, by the year 2000, are expected to comprise 24% of the physician supply and number 173,000. By the year 2020, women will constitute more than one-third of active physicians and number about 310,000.

The BHPr physician supply forecasting model uses separate death and retirement rates for men and women based on the workforce separation experiences of medical doctors in the early 1980s. These figures show that female physicians outlive male physicians by a slight margin but retire at a slightly younger age, with temporary separations occurring in the childbearing years and lowering their overall work-life expectancy. Overall, women physicians' work-life expectancy is approximately 1 year less than that of men according to separation rates currently employed in the model.

For workforce projections, supply is usually expressed as FTEs. A commonly used definition of an FTE physician, and the definition used in the bureau's projections, is based on annual work hours. The BHPr definition of FTE used in projections of workforce availability considers just the number of hours worked per week and per year for subsectors of the physician population, including gender, age, medical specialty, and country of medical education. It does not consider differences in provision of medical services or content of visits. Therefore, the FTE-based supply forecasts measure service "inputs" as the numbers of physicians, adjusted for work hours, who provide patient care services.

Forecasts of the total number of active medical doctors, women medical doctors, and their expression in terms of FTE numbers of physicians are shown in Figure 12. The projected FTE loss comes largely from more female physicians in the workforce, who historically have worked fewer hours per week and are less likely to be involved in patient care activities. There is an opposing trend that narrows the difference in FTE and non-FTE forecasts as a result the movement toward a slightly older physician population in later years. By 2020, the FTE conversion compared with total numbers would result in 31,000, or only 4%, fewer medical doctors in the total active forecast.

Considering the fact that gender-based adjustments result in a small (4%) downsizing in physician supply, as well as the inability to adjust for other factors affecting the work output of women physicians, COGME believes there is currently no evidence to show that an increase in the number or proportion of women physicians produces a significant decline in effective physician supply. COGME wishes to point out, however, that in as much as women are more likely to enter primary care specialties, any impact on the workforce will be felt moreso in those specialties.

Finding 5: Gender bias, a reflection of society's value system, remains the single greatest deterrent to women achieving their full potential in every aspect of the medical profession and is a barrier throughout the full professional life cycle.

- **Sexual harassment remains prevalent despite legislation and regulations prohibiting it.**
- **Societal expectations of the roles of women, particularly regarding child and family care, affect the careers of women physicians more than those of their male counterparts.**
- **The need for adequate child care is a critical issue in the career advancement of female physicians.**
- **There appear to be barriers to equal participation of women in some specialties and subspecialties, many of which remain male dominated.**

Certain general themes continually arise in the discussion of factors that can affect the quality of life for women physicians, restrict their career path, or block their contributions to medicine. These general themes include: sexual harassment and gender bias, lack of mentors and role models, attitudes about women's career commitments, lack of institutional responsiveness to biological and family role differences in women, and leadership issues.

Sexual Harassment and Other Gender Discrimination

Gender Bias

Gender bias is a generic term referring to attitudes and behaviors based solely on gender and stereotypic

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expectations assigned to that gender. Gender bias results in differential treatment of men and women. When the treatment has a negative impact, it can constitute gender discrimination, which has been defined by Lenhart as "behaviors, actions, policies, procedures, or interactions that adversely affect a woman's work due to disparate treatment, disparate impact, or the creation of a hostile or intimidating work environment" (13). Overt forms of gender discrimination are illegal and can be addressed through legal or procedural avenues. More subtle forms of gender bias can still be destructive and are more difficult to resolve legally (22).

Despite their increasing numbers, women physicians continue to be subjected to overt and subtle gender bias in professional interactions and opportunities regardless of their field of practice, extent of training, professional accomplishments, and professional goals. Gender bias is the single greatest deterrent to women physicians achieving their full potential in every area and aspect of the medical profession and across all stages of medical careers. It especially inhibits women from attaining all leadership levels and, in particular, senior leadership roles. Most of the professional and personal challenges facing women physicians are, in fact, reflections of society's stereotypic sex role expectations.

Discrimination toward women physicians today is usually not as overt as it was in 1925, when 9 of 10 hospitals refused to admit women interns. Instead, women consistently report more subtle and less readily documented behavior, which falls into the category of gender stereotyping, or a bias in the perception of women's competence or leadership abilities.

Substantially more women than men applicants continue to report that their medical school interviewers ask inappropriate and illegal questions about current and future personal life choices and responsibilities, particularly about significant relationships, pregnancy, and child care. Since 1988, the AAMC medical student graduation questionnaire completed by senior medical students has contained an item on whether residency programs asked for various information types of during interviews. Women students, more frequently than men, have reported questions about the stability of personal relationships (25% versus 17%) and intention to have children (40% versus 16%). Title IX of the Education Amendment Act of 1972 prohibits asking only one gender this type of question or excluding an applicant based on answers to such questions. Even if an interviewer is not in legal violation of these rules, such questions put women in a defensive posture at the very start of their medical careers (36).

Gender discrimination and bias are also features of preclinical and clinical training and curricula. Many of the slides, humor, and comments used by faculty members in teaching are sexist and perpetuate stereotypes about women. Another major area of concern is the use of the "70-kilogram man" as the paradigm for the definition of normal physiology. Until recently, most research was conducted only in relation to men. When female and male students repeatedly learn male values only as normal, they are likely to incorporate these values into their understanding of what is important in medicine. When senior male faculty communicate these gender stereotypes, it is to be expected that some male as well as some female medical students may incorporate them into their own developing value system.

In academia, women speak of unconscious assumptions or stereotypes about their abilities that contribute to the "glass ceiling" effect of limits to advancement (37). One telling anecdote from the field of psychology, related in the findings of the Society for the Advancement of Women in Health Research advisory meeting, illustrates the attitudes that women physicians face. In a 1989 study of 147 chairs of psychology departments, participants were given the curriculum vitae of 10 researchers with a doctor of philosophy degree and asked to assign them an academic rank. The curriculum vitae had been randomly assigned a fictitious male or female name. In most cases, "women" researchers were consistently assigned to the lower rank of assistant professor, while men were given the rank of associate professor (38).

Women faculty members are often assigned inordinate clinical and teaching responsibilities, leaving them with less time for research. At the same time, academia devalues teaching and clinical activities in tenure considerations. This results in a self-perpetuating two-tiered faculty system, with the disproportionately female clinical faculty at the lowest academic levels (10, 29).

Women's own perceptions of how they are treated are telling. Responses are consistent across medical practice, education, and training. In one study, 55% of women physicians (versus 2.1% of men) said they felt that their career progress had been delayed by sexual discrimination (39). In a 1989 report on harassment of Massachusetts women physicians, over one-half (54%) of the respondents reported they felt they had encountered some form of sexual discrimination during the past year (40).

Sexual Harassment

Sexual harassment is a specific type of gender discrimination, generally defined as any unwanted sexual attention in the workplace—including sexual advances, requests for sexual favors, or verbal or physical conduct of a sexual nature—that is made the basis for an individual's employment or promotion or

that interferes with an individual's work performance or environment (1, 13). In the medical school or workplace, such harassment assumes particular force because the recipient is constrained by an unequal balance of power and has difficulty challenging the subtle or even overt behaviors by someone in a higher position of authority. Even when sexual harassment of women physicians is not legally actionable (i.e., does not affect employment or promotion status), it may nevertheless have a detrimental effect on the professional well-being of women in medicine, contributing to stress levels, affecting self-esteem, and imposing a constraint on their professional lives (41, 42, 43).

In a study of medical student abuse, 55% of the female respondents said they had been objects of sexual advances, most frequently by clinical faculty members or interns and residents (44). Another study of 33 female and 49 male internal medicine residents at one institution found that 73% of the women (and 22% of men) had experienced at least one incident of sexual harassment; the women responded that more incidents occurred during medical school, the men during residency (45). The 1990 AAMC medical school graduation questionnaire revealed that 60% of the women and 15% of the men had been subjected to sexual harassment or discrimination in medical school (46). The American Medical Women's Association published the results of a 1989 survey of women physicians in Massachusetts showing that more than one in four respondents (27%) had experienced incidents of sexual harassment within the preceding year (40).

Instances of sexual harassment are rarely formally reported out of fear of reprisal and/or the conviction that nothing will be done. In a January 1993 poll of 2,300 women physicians by the AMA, a large majority of the women surveyed said they had experienced sexual harassment in medical school (79%) or residency (64%), and 42% had experienced it in their medical practice. A significant number of women did not report such harassment, however, and their reasons reflect why remedies for sexual harassment may be difficult: 58% said they feared a negative impact from reporting incidents, 46% said they "feared no action would be taken," and 34% believed no sexual harassment policy existed at their institutions (39, 47). The very low reporting of sexual harassment parallels findings in other work sites. In one study of sexual harassment of Federal employees, only 5% of both females and males who believed themselves to be victims reported the incidents (48).

Attending physicians and other professional colleagues are not the only sources of harassment. In a survey of 1,064 Canadian women family physicians, more than 75% reported experiencing some sexual harassment by patients during their careers (49). In a 1989 study of stress in women and men residents by Dickstein and Batchelor, sexual harassment by attending physicians was experienced by 18% of the women versus 8% of the men. Sexual harassment by patients was experienced by 25% of the women versus 7% of the men, and sexual harassment by patients' families was experienced by 7% of the women versus 3% of the men (41).

Lack of Mentors/Role Models

Mentors form a fundamental rung on the career ladder of medicine. Senior professionals give their junior colleagues attention and feedback concerning career development; steer them toward advantageous research projects; and are a resource for advancement, graduate opportunities, funding for projects, and credential support. Mentoring relationships can provide a valuable resource to young physicians, providing contacts, inside information, and other intangible aids to success. Some physicians believe success is impossible without a sponsor who will promote, protect, and in other ways enhance their professional achievements (50). For women entering a predominantly male-oriented profession, men can be mentors, but women are also needed. Senior women faculty members may be even more necessary to help female students, residents, and junior faculty members develop professional identity.

Unfortunately, women physicians often lack access to important mentor relationships with either men or women early in their medical careers, a phenomenon that can handicap them throughout their professional lives. There are few women leaders to provide advice, encouragement, and role models of leadership behavior. Without mentoring, women are handicapped in obtaining the research grants, publication opportunities, tenure track positions, and other opportunities that would help bring them into leadership positions.

Men can make excellent mentors for young professional women, and such relationships should be encouraged. Men are often in a high-ranking position and can provide valuable advice on achieving status and success; however, men may be less sensitive to sexual discrimination and less likely to encourage their female proteges (51, 52). In addition, some studies have shown that male mentors appear to make themselves less available to female physicians than do female mentors and may often provide less feedback, either positive or negative, to female undergraduates or residents than to males in those positions (53).

Biological and Family Role Differences

The family patterns of women in medicine indicate that many women face unique pressures that most of their male colleagues do not confront. Family considerations also serve to motivate women to exert new pressures on the medical system to respond to those differences.

Marital Status

The profiles of women who select medical careers are changing. In the past, women medical school applicants and graduates were often considered atypical. Most did not marry or bear children because they were led to believe that those roles were incompatible with their medical profession. Although today a greater percentage of women than men physicians have never married (14% versus 4.6%), contemporary women physicians are more likely to reflect the general population in their marriage patterns than did previous women in medicine. Three-quarters of all women physicians (74.7%) now are married, compared with 88.7% of male physicians. Although the phenomenon is not unique to women physicians, they tend to perform more household and dependent care duties than do their husbands.

Childbearing

The unique pressures upon women physicians to balance career and family are particularly evident when examining childbearing statistics. Data from AMA for the years 1987–89 show that 84.6% of women physicians have children (while 93.2% of male physicians have children). More than one-third (41.5%) have young children, and, among women younger than 40, more than two-thirds have young children (Table 36) (1). One study of women physicians found that the mean age when the women first gave birth was 30.6 years, an age when many are still in residency or embarking on the first years of their practice. According to a 1984 AMA survey, one-half of women physicians had their first child during residency, and one-quarter had a second child during that time (1).

Although statistics on women physicians rearing young children are at first glance comparable to those relating to male physicians, the experiences and biological demands of pregnancy and motherhood are obviously unique for women. In addition, there are different societal expectations regarding women's and men's roles in child and family care. As a result, women are more likely than their male colleagues to have family obligations that will limit the time they can devote to their professional responsibilities at pivotal career stages. Male physicians are much less likely than their female colleagues to have spouses employed outside the home (45% versus 92.6%), a factor that can decrease the household and child care demands imposed on the physician–spouse. In contrast, not only do more married women physicians have employed spouses, but 44.8% of the married women physicians younger than age 40 (versus 9.7% of the men in that age group) have spouses who are also physicians (1). Women physicians whose domestic partners are also physicians are twice as likely to interrupt their careers for their partners' careers and to assume significantly more domestic responsibilities, while working fewer hours practicing medicine (54).

Table 36. Family Characteristics of Female and Male Physicians (%)*

	All		*Under 40*	
	Female	*Male*	*Female*	*Male*
Married spouse present	74.7	88.7	76.7	84.2
Previously married	11.3	6.7	6.5	4.3
Never married	14.0	4.6	16.9	11.5
Spouse an MD married	-	-	44.8	9.7
Spouse employed if married	92.6	45.0	93.8	45.6
Have any children	84.6	93.2	77.5	85.4
Have young children, if any	41.5	28.8	84.8	82.6

Source: American Medical Association. Women in Medicine in America: In the Mainstream. Chicago, AMA, 1991

Parental Leave

Although attitudes are changing and increasing numbers of men are taking a more active role in caring for their children, the lack of parental leave policies and adequate child care can have a disparate impact on women physicians. In a 1989–90 AMA maternity leave survey, less than one-half of the practicing women physicians reported that their workplace had a standard maternity leave policy. Of those work sites with a policy, over one-half (53%) allowed leave of 6 weeks or less (1). In academic medicine, only 38% of women in a 1989 survey said that their institution had a formal maternity leave policy. Most of the women in this survey took no time off before their delivery and returned to work within 6 weeks (Table 37). Over one-half of the women (55%) said they felt their leave had been too short (55).

Women in medicine who give birth during residency generally have little time off before they resume their professional responsibilities. In a 1989 report on interviews with women in internal medicine departments, 72% of the six of ten women with children had taken no time off before their delivery. The average length of official maternity leave taken was 6 weeks. Eight of ten women returned to work within 12 weeks of delivery.

Although institutions increasingly are recognizing the special needs of women residents, policies vary. A 1986 Council of Teaching Hospitals survey of housestaff reported that 57% of responding hospitals said they had a written policy regarding maternity leave (56). In 1989, AMA data showed that three-quarters of responding programs had a standard policy on maternity leave, and one-third had a paternity leave policy (1).

Table 37. Parental Leave Policies for Faculty of U.S. Medical Schools

Policies	*Schools*	*(%)*
Written Guidelines		
None	26	(22)
Specific written maternity leave policies	40	(34)
Disability or sick leave classification	53	(45)
Physician note required	69	(58)
Salary support		
Required to use sick days	72	(61)
Required to use vacation days	29	(24)
Option to use vacation days	63	(53)
Salaried leave	37	(31)
Continuation of Benefits Paid by Medical School		
Paid leave	112	(94)
Unpaid leave	24	(20)
Job guarantee	115	(97)
Parental leave guidelines	38	(32)
Unpaid leave required for parental leave	100	(84)
Paternity leave guidelines	12	(10)
Adoption leave guidelines	38	(32)
Temporary part-time status allowed for maternity or paternity leave	111	(93)
Tenure period may be prolonged	85	(72)
Established methods for covering responsibilities of faculty or parental leave	85	(72)
Medical School has child care facilities	21	(18)
Affiliate hospital has child care facilitie	31	(26)

Source: Grisso JA, Mansen L, Zelling I, Bickel J. Parental leave policies for faculty in U.S. medical schools. Ann Int Med 1991;14:43-45.

Even when hospitals have a written policy for residents, it is not always used. A 1992 AAMC survey of major teaching hospitals found that 36% of responding hospitals had a job-sharing program for residents, but one-half of these hospitals said no residents were currently participating in the program (57).

The decision of women residents to take maternity leave may be influenced partly by specialty board eligibility requirements. Maternity leave is classified as disability leave in many institutions. Medical specialty boards determine the amount of disability a resident can take in 1 year and still meet eligibility requirements for board examinations. Specialty boards in all specialties but pediatrics and internal medicine restrict disability leave to 6 weeks or less per year. Pathology allows only 2 weeks per year.(12,51)

Child Care

Because 92% of married women physicians have a spouse working outside the home, child care is crucial to their ability to participate in their profession. The income for most residents is insufficient for at-home child care services, particularly considering the unpredictable and long hours of residency education, yet the medical structure has been slow to recognize that a sizable portion of its workforce requires accommodation to meet the demands of family responsibilities. A 1990 American Medical Women's Association survey on day care programs found that about one-half of all responding teaching hospitals in the United States had no child-care facilities for physicians or staff (58). A 1989 study by AMA found that about 40% of teaching hospitals and only 17% of community hospitals offered child care services. The services may not always benefit residents for few hospital-sponsored facilities offered 24-hour or extended weekend services.(1)

The development of flexible policies (adequate day care options, arranging part-time and decreased workloads and vacations to coincide with young children's needs) would better enable women physicians to fulfill their child care responsibilities. Such policies would ease the strain under which women physicians with children are likely to labor and may

allow institutions to retain more women physicians in medicine.

Attitudes About Women's Career Commitment

The lack of parental leave policies or day care facilities can create an immediate short-term hardship on women physicians who have children. Additional, long-term consequences can be imposed by attitudes about the biological differences between women and men physicians and entrenched societal role expectations.

Women physicians who take time off to bear and raise children or decrease working hours to devote time to family care may be viewed as less serious about their careers. As a result, they may suffer career delay and loss of opportunities or practice positions. They may also forfeit their position on the tenure track of academic medicine or receive negative evaluations. Under the current system's inflexible expectations of career advancement, postponement of activities is often equated with abdication of career aspirations.

Women physicians with children often face a "no-win" situation in their struggles to juggle careers and family responsibilities. Nearly one-half of male faculty members surveyed in 1982 felt that women physicians who spend long hours at work are neglecting their responsibilities to home and family (59). Yet when women have to adjust their hours in order to meet family obligations, they may be unfairly stereotyped as being less dedicated than men to the practice of medicine.

Testimony at the 1992 ORWH hearings urged the medical community to adopt new definitions of successful career paths so that women who have taken time for family responsibilities are not viewed as less committed to their profession (60). One option is for the academic community to explore the concept of extending, slowing, or eliminating the "tenure clock" for those who must interrupt or reduce professional activities during a fraction of their professional careers.

The medical community can look to other professions for models of adaptation or flexibility, such as the slowing or adjusting of time on the "partnership track," which has been explored by the legal community. Another possibility is more acceptance of flexible time, part time, or job-sharing opportunities. Options for less-than-full-time positions could be considered for women physician faculty members. One study of part-time internal medicine faculty positions revealed that more men than women work part time and that, although promotions and career advancement are more difficult to achieve, part-time faculty members express a high degree of career satisfaction (61).

As suggested in an earlier section, women's style of communicating with patients may involve taking longer with the patient interview, a fact that may also affect how women physicians are evaluated under standard volume measures of patient care. While such a communication style may be particularly appreciated by female patients and increasing numbers of male patients, longer time spent with patients may not translate positively on a "productivity measure," which tends to measure physician "productivity" by the volume of hours worked and the number of patients seen.

Leadership and Communication Issues

Another barrier to women's advancement in the medical field is their underrepresentation in leadership positions in academia, research, and clinical practice. Women must learn to work effectively within the existing leadership structure and the male model of communication, competency, and authority. However, many women still lack experience and training in leadership and negotiating skills, or they feel uncomfortable with an assertive management style.

As women become more visible and prominent within the medical profession, they may exert considerable pressure on the profession to acknowledge a different style of leadership, one that uses female patterns of relationship, collaboration, and communication. Women's leadership style has been described as transformational (i.e., in which subordinates transform their own self-interest into the interest of the group through concern for a broader goal), and women leaders ascribe their power to personal characteristics such as charisma, interpersonal skills, hard work, or personal contacts rather than to organizational stature (62). If women lead successfully in nontraditional styles (i.e., not in the "command-and-control" transactional leadership style traditionally associated with men), they should not be viewed as inappropriate leaders.

The Work That Lies Ahead

Women constituted less than 10% of the medical school classes in 1960s, and the number of women physicians quadrupled between 1970 and 1990. In light of this growth, parity with men in medicine could be considered in terms of increasing the numbers of women physicians to provide more equal representation. Numeric representation alone does not constitute true equality, parity, and representation, however. The role of women in the physician workforce should be viewed beyond numbers to take into consideration other factors that affect the future of the profession.

Women remain underrepresented among leaders in medicine, in both practice and academic settings. This lack of balance can have detrimental effects on women physicians as well as on the profession. Women

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physicians are deprived of completely fulfilling careers because of their unequal need to balance professional and personal priorities and to combat bias in the workplace that can relegate them to lower-level positions. The medical profession is deprived of the potential talent, productivity, and skill that women physicians can bring to patient care and teaching, serving as role models for future generations of female (and male) physicians. Actively involving women physicians at all levels of the profession will create new opportunities for leadership, promote a more well-rounded approach to personal and professional development, and enhance the medical environment for all physicians and their patients.

Findings and Recommendations: Women in the Physician Workforce

Although women physicians are increasing in numbers, they are not gaining as rapidly in positions of leadership, in certain specialties, and in research opportunities. Gender bias, family responsibilities, and societal perceptions create barriers to women's progress in the medical profession. Institutions need to support the advancement of women and maintain flexible policies that will enable them to participate in activities that will foster their personal and professional development and to contribute to the practice of medicine.

Findings

1. The projected eightfold increase between 1970 and 2010 in the number of women entering the medical profession will increasingly affect all aspects of medical education, research, and practice.

2. Women physicians remain underrepresented among the leaders in medicine.

3. Women physicians tend to select a relatively limited number of medical specialties as their areas of practice. The reasons for this clustering have not been fully delineated.

4. Physician gender has little impact on workforce forecasting.

5. Gender bias, a reflection of society's value system, remains the single greatest deterrent to women achieving their full potential in every aspect of the medical profession and is a barrier throughout the professional life cycle.

Recommendations

1. Medical schools and academic health centers should be encouraged to stimulate interest in medical careers among talented girls through specific outreach programs, starting in the early elementary school years with increasing emphasis through high school and into the junior year in college.

2. Medical schools, academic health centers, and professional societies for physicians should develop explicit programs of leadership development for women physicians. This should include a mentoring process for students, residents, fellows, and junior faculty members.

3. Because most institutional leadership positions are filled by men, it is critical that these male leaders take an active role in creating opportunities that groom potential future female replacements.

4. Female physicians should receive the same compensation as male physicians for the same work. To ensure this happens, salaries should be analyzed at specific intervals based on gender.

5. Current and expanded efforts to increase the training of women and their participation in both basic and clinical medical research should be supported.

6. Optional alternative career paths that do not foreclose tenure or advancement should be provided without pejorative labels. At a minimum, maternity and childrearing leave should be excluded from the time limits for eligibility for tenure.

7. Eligibility and age requirements for fellowships and other positions should permit gaps in career activity associated with childbearing.

8. A national physician workforce commission should continue to monitor the gender ratio in the physician workforce and among the leadership. The commission could be charged with setting goals and assessing progress.

9. Implementation of workforce policies should not disproportionately restrict or otherwise impair women's access to any aspect of the medical profession.

10. Previous COGME recommendations are not intended to limit disproportionately the opportunities for women in subspecialty care. Workforce policies aimed at decreasing the number of residency positions and increasing the proportion of residency positions in primary care should be monitored for their impact on women physicians.

11. All medical schools, academic health centers, and residency and fellowship programs should have explicit procedures for providing education about gender bias and for assuring accountability to the principle of equal opportunity, compensation, and advancement for women.

12. Perceptions of bias against women and their work should be minimized by instituting simple blind-

ing mechanisms such as authorless review of scientific papers and grant applications.

13. Medical schools, academic health centers, and residency programs must openly report cases of sexual harassment and have an explicit process for changing behavior.

14. Educational, training, and work schedules should be flexible. Women and men have personal and family responsibilities that may interfere with a rigid program. Each medical and osteopathic school should examine its policies in this matter. The Liaison Committee on Medical Education and the American Osteopathic Association should consider modifying their standards to reflect the value of this accommodation to the educational accomplishments of its students and faculty. Flexibility should also be encouraged by Residency Review Committees and the Accreditation Council for Graduate Medical Education.

15. Medical education and graduate medical education programs should have appropriate and explicit family leave policies and provide or ensure access to high-quality dependent care for physicians and other faculty, students, and staff. Academic medicine should make available less-than-full-time options and flexible work schedules to accommodate childrearing and create a model for career-long opportunities to balance the professional and personal lives of women physicians.

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Appendix

Women's Health Issues Throughout Their Life Span*

Childhood and Adolescence**

Central to the psychosocial development of young women is the process of gender identification and orientation and the development of autonomy and achievement. As young women progress through puberty and adolescence, emerging health issues are largely related to developmental changes involving physical and sexual growth and changing relationships within and outside the family.

Major causes of morbidity among female adolescents are largely, but not totally, related to their behaviors. Risks of sexual activity include unintended pregnancy and sexually transmitted diseases, which can have long-term effects. Female adolescents, especially Caucasians, have high rates of smoking cigarettes and drinking alcohol. They are the highest risk group for the development of eating disorders and obesity.

The two leading causes of death in female adolescents are nonintentional trauma, especially motor vehicle accidents, and suicide. The third leading cause of death is interpersonal physical violence. Female adolescents have a high risk of being sexually abused and assaulted, which is linked to the development of mental health symptoms. Prominent mental health issues for female adolescents include unipolar depression and anxiety disorders.

About 4% of adolescent females have a chronic disease, condition, or disability serious enough to limit their activity. Common chronic conditions include developmental delay, hearing impairment, orthopedic impairment, cerebral palsy, asthma, diabetes, seizure disorders, Turner's syndrome, and cystic fibrosis. Many of these disorders become manifest during childhood. Autoimmune disorders, such as systemic lupus erythematosus, juvenile rheumatoid arthritis, and thyroid disease also affect a small proportion of female teenagers, and these conditions often develop during puberty.

Ages 15-44 Years

During young adulthood, mortality rates in women are relatively low and deaths due to injury predominate. As women progress through this age group, cancers of the breast and reproductive tract emerge as the leading cause of death, followed by unintentional injury and heart disease.

Breast and Reproductive Tract Cancers

Breast cancer in young women has unique features that require special consideration by physicians (1). Since hereditary factors contribute more to breast cancer in younger than in older women, issues related to surveillance in young women with a family history of breast cancer become overriding concerns (2). All women should be encouraged to perform breast self-examination, to be examined periodically by a clinician, and to undergo mammography as indicated.

Human Immunodeficiency Virus Infection

The most dramatic trend in this age group has been the emergence and rapid rise of human immunodeficiency virus (HIV) infection as a major cause of death. Infection with HIV currently ranks fifth as a cause of death in African-American women ages 24–44 and in some geographical areas has become the number one cause of death (Fig. 3) (3). Poor and minority women have experienced the greatest increase in death rates from this disease. The biological and social aspects of HIV infection are difficult to separate; however, evidence suggests that HIV infection in women may have a different presentation and clinical course and worse prognosis than in men. However, the impact of this disease on gynecologic and reproductive issues is significant. Because of the potential interrelationship between HIV infection, human papillomavirus infection, and cervical neoplasia, as well as recent questions about the accuracy of the Pap test in women infected with HIV, the Centers for Disease Control and Prevention have revised their guidelines for the use of the Pap test in HIV-infected women. As a result of HIV transmission during pregnancy, HIV infection is the leading cause of death among Hispanic children and the second

* Unless otherwise noted, the references for this Appendix are derived from the National Institutes of Health, Office of Research on Women's Health "Hunt Valley Report" (1991).

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leading cause of death in African-American children. The social consequences of this disease are enormous and result in loss of productive life, disruption of family structure, and premature death. The challenge to physicians to help control the transmission of HIV infection is an essential part of national prevention efforts.

Risk-Taking Behaviors

An important role of physicians in the care of women is to recognize and reduce risk-taking and other unhealthy behaviors. Health habits become established during early adulthood. Unhealthy behaviors not only place women at risk for life-threatening events, but also have important implications for the development of illness later in life. For example, early or unprotected sexual activity increases women's risk for sexually transmitted diseases. These diseases are transmitted more easily from men to women, and women are disproportionately affected because of infectious complications that can lead to disorders of reproductive function, such as pelvic inflammatory disease, ectopic pregnancy, and infertility. Women should be encouraged to have their sexual partners use condoms to avoid sexually transmitted diseases and unintended pregnancy.

Substance Abuse

The adverse effects of cigarette smoking on lung cancer and other respiratory diseases, heart disease, osteoporosis, and reproductive function are well documented, yet women become established smokers at an earlier age and have longer lifetime smoking histories than men. Even though cigarette smoking has been identified as the largest risk factor for death in the United States, the cigarette industry is increasing efforts at advertising directed to young women.

The effects of alcohol differ in women and men. Because of differences in their weight and physiological makeup, women may be more susceptible than men to the effects of alcohol. Female alcoholics are also more likely to die from suicides and accidents. Despite this evidence, drinking is heavily promoted, particularly to minority women, undermining efforts at risk reduction.

Drug-dependent women tend to be often lacking the resources they need to remove themselves from abusive, oppressive conditions. They often lack self-esteem as well as social support systems and financial resources. Often, illicit drug use becomes the primary method of coping with these conditions. Therapeutic interventions aimed at male behavioral responses are often applied to drug-dependent women. Considering the different psychosocial factors involved, special techniques should be considered to engage women in effective drug abuse intervention and treatment processes (4).

Eating Disorders

Social values and cultural pressures have contributed to the increasing prevalence of eating disorders. Anorexia nervosa is a syndrome in which extreme weight loss occurs due to inadequate food intake. Bulimia nervosa is an eating disorder marked by self-induced vomiting or the use of laxatives or diuretics to prevent weight gain. Both conditions occur predominantly in adolescent females (5). These disorders are often refractory to treatment and can be life threatening. Anorexia specifically has among the highest morbidity and mortality rates for mental disorders.

Reproductive and General Health Maintenance

The ability of women to succeed depends, in part, on their reproductive freedom and health. To help women achieve these goals, physicians need to understand the safety, effectiveness, and acceptability of current methods of contraception in culturally diverse women. As understanding of many of the disorders of reproductive function increases, it becomes clear that routine care can help maintain health and prevent disease. Women's health no longer should be limited to gynecologic concerns but instead should take all medical and psychosocial factors into consideration. Women should be encouraged to receive routine care and to assume an active role in their total health care. Each routine visit should create an opportunity to counsel women about the beneficial aspects of a healthy diet, exercise, and avoiding health risks. Women should also receive counseling as needed about stress management, interpersonal and family issues, sexuality, or any other concerns that affect their health or quality of life.

Autoimmune Disorders

Autoimmune disorders are among the most prevalent in women in this age group (6). Most of the autoimmune diseases are more common in women than in men and cause greater morbidity. Many are influenced by changes in estrogen levels, particularly during pregnancy. Among the collagen vascular diseases, rheumatoid arthritis, systemic lupus erythematosus, and scleroderma have prevalence rates that are three to nine times higher in women. Many of the autoimmune-related endocrinopathies, such as Hashimoto thyroiditis and Graves disease, have a female-to-male ratio as high as 15:1. Other autoimmune diseases that are more prevalent in women are type 1 diabetes mellitus, idiopathic adrenal failure, multiple sclerosis, and myasthenia gravis. Less well recognized by physicians is the role of autoimmunity in recurrent pregnancy loss and infertility in women.

Mental Disorders

Depressive illnesses are twice as common in women as men. It is estimated that 6% of women will experience a major depressive episode sometime during their lifetime and that many will suffer chronic low-grade symptoms of depression. The higher risk of depression in women increases from childhood to adolescence and continues throughout life; however, the genetic, biological, and environmental contributions to this gender effect are not fully understood. Women are three times as likely as men to be diagnosed with an anxiety disorder, including agoraphobia, simple phobia, and panic disorder, as well as with somatization disorders. In addition, one of five women experiences mood, cognitive, or behavioral changes associated with cyclic or marked changes in hormone levels that are severe enough to warrant a diagnosis such as premenstrual syndrome or postpartum depression.

Injuries

Among the unintentional and intentional injuries in this age group, motor vehicle accidents account for 43%, homicide for 23%, and suicide for 19% of deaths from injury. The death rate from motor vehicle accidents is highest in women ages 15–24 years; more than one-half of these deaths are alcohol related. A major tragedy in the United States is the rapidly increasing death rate from homicide and suicide in young women.

Interpersonal Violence

A major cause of psychosocial morbidity in women is sexual and physical abuse. Perhaps in no other area of medicine have gender-related inequities in our social structure had such an adverse effect on women's health. The data are staggering: It is reported that 20% of adult women, 15% of college-age women, and 12% of adolescent girls have experienced sexual abuse and assault, and one of eight women in an ongoing relationship with a man has been the victim of assault by her partner. Pregnancy is a particularly high risk factor for assault (7). Primary physicians are in a key position to intervene, because women often consult them for injuries related to the assault and for medical and psychiatric symptoms caused by ongoing abuse. Unfortunately, lack of knowledge and training and misconceptions about domestic violence often cause physicians to fail to recognize or address symptoms of abuse (8, 9). In response to this problem, the American Medical Association is developing protocols to help physicians detect and manage abuse in women and has published guidelines outlining the ethical responsibility of physicians to diagnose and treat domestic violence (7).

African-American women, similar to African-American men, are more likely than other racial or ethnic groups to be homicide victims, and firearms are used in more than one-half of these deaths. Of particular note, in 1992, violence—already the leading cause of death in African-American men aged 15–24 years—became the leading cause of death for women in that age group as well. Because 30% of murders in women are perpetrated by a family member or acquaintance, the contribution of ongoing family violence to these fatal events is substantial.

Ages 45 to 64 Years

Death rates for women in the age group 45–64 years have declined by 30% in the past 25 years. Previously the leading cause of death was heart disease; however, cancer is now ranked number one, with lung cancer emerging as the leading cause of cancer deaths. These shifts in mortality rates reflect primarily a decline in death rates for heart disease that has been observed in both sexes and is attributed to changes in lifestyle such as better control of hypertension and lower blood cholesterol levels.

Chronic Disorders

Many of the important chronic conditions in women first appear in this age group, and the prevalence of some increase markedly during this time. There are significant racial and ethnic differences in the prevalence of many of these conditions. The prevalence of obesity especially is disproportionately high in minority women; 44% of African-American and 32% of Hispanic women are overweight, compared with 24% of white women. Because obesity is a major risk factor for diabetes, heart disease, stroke, gallbladder disease, and some cancers and may be a factor in osteoarthritis, weight control in women is an important public health issue.

Menopause

The effect of decreased hormone levels on osteoporosis and heart disease in women is one of the most important issues in women's health and the focus of the largest and most expensive clinical trial ever conducted (10). Because decreased estrogen levels appear to promote the development or progression of these disorders, which are a major cause of morbidity and mortality in women as they age, estrogen in the form of hormone replacement therapy (HRT) is being prescribed increasingly in menopausal and postmenopausal women (11). A woman's decision to use HRT should be based on consideration of the beneficial effects of HRT on menopausal symptoms, osteoporosis, and cardiovascular disease and the reported risks associated with HRT, specifically an increased risk of uterine and breast cancer. The role of physicians is to provide women with the information they need to make decisions based on individual needs and personal philosophy.

Life Cycle Transitions

Although the menopause encompasses many of the physiological changes that define this period, women also experience major transitions in social roles and life circumstances that profoundly affect their physical and mental health. Children leave home, many women become widowed or divorced, parenting roles change as women are called upon to care for aging parents, and disabilities increase, making it difficult for some women to function within and outside the home. Not surprisingly, 3% of women will experience a major depressive episode during this period. An understanding of these life events is essential to the comprehensive care of mature women.

Ages 65 Years and Older

Heart disease is the leading cause of death in older women, followed by cancer and stroke. Mortality rates for all three disorders rise steeply after age 65 years and begin to approach the rates for men. Chronic pulmonary disease and pneumonia continue to cause high death rates because of the increase and severity of infections associated with an age-related decline in immune function. Injury is the sixth leading cause of death in older women; in contrast to younger age groups, most of these deaths are related to falls.

Chronic and Degenerative Conditions

After age 65 years, many other chronic illnesses, such as hypertension, diabetes, arthritis, most digestive disorders, and thyroid disease, are more common in women than men of the same age and cause significant morbidity. As women's longevity increases, they bear the burden of illnesses that are seen primarily in the very old. Of these, the neurological degenerative diseases, such as dementia, sleep disorders, and neurosensory and movement disorders, are particularly common in women. Unfortunately, the added years of life in women are often spent in a frail or dependent state and often result in institutionalization. Currently, women residing in nursing homes outnumber men three to one. In particular, urinary incontinence and osteoporosis put women at high risk for being institutionalized. Prevalence rates of urinary incontinence are twice as high in women as in men and affect up to one-half of community-dwelling women. Osteoporosis is associated with deformity and pain secondary to vertebral fractures; however, hip fracture, usually the result of a fall, is the most serious consequence of osteoporosis in older women (12). According to the National Osteoporosis Foundation, one-half of women with a hip fracture will never walk independently, one-third will never live independently, and one-fifth will die within a year of the fracture.

Social Isolation

The social and psychological changes that women experience as they age add to the burden of illness. Social isolation increases due to the death of loved ones, loss of financial stability, and increasing physical disabilities. In addition to an increasing incidence of dementia with age, mental health problems become more prevalent or serious. The role of physicians is to recognize and help reduce the impact of these accumulated conditions on women's ability to function and on their quality of life. Solutions should be sought to help elderly women maintain their independent living arrangements while receiving care and support and social interaction.

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